

**ATTACHMENT E**

Public Participation Report (including sampling of all written comments received)

Date Received	FirstName	LastName	Comment In Folder				
10/9/18	Anthony	Boedigheimer		8/22/18	Gertrude	Albert	
8/20/18	Sara	Lapsley		8/27/18	Tom	Albert	
8/20/18	Eugenia	Nelson		9/10/2018	Phyllis	Albritton	General
8/20/18	S. R.	Smith		8/28/2018	Christine	Alcaraz	General
9/7/2018		12662512 (Phillips)	General	9/10/2018	F. P.	Aldhizer	General
8/23/2018	Naseem	Abbas	General	8/10/2018	Walter	Alexander	General
8/24/2018	Hanif	Abbasi	General	9/19/18	Donna	Alforce	
9/21/2018	Jeeva	Abbate	Other	9/12/2018	Amanda	Alger	Other
9/4/18	Joseph	Abbate		9/7/2018	Patricia	Aliperti	General
9/11/2018	Joseph Jeeva	Abbate	Technical	8/20/18	Sandra	Allan	
8/24/2018	Richard	Abbott	General	9/10/18	Hobs & Joyce	Allan	
8/17/2018	Kathleen	AbdelMassih	General	9/12/18	Rick	Allan	
9/8/2018	Jennifer	Abel	General	8/24/2018	Travis	Allen	General
9/18/2018	Virginia	Abraham	General	8/28/2018	Anne	Allen	General
8/6/2018	Michael	Abul-Hakim	Other	8/17/18	William	Allen	
9/10/2018	Ellen	Adams	General	9/7/2018	Rusty	Allen	General
8/21/2018	Juel	Adams	General	8/24/2018	Rusty	Allen	General
9/21/2018	Barb	Adams	General	9/4/2018	Jessica	Alley	General
8/20/18	Richard & Nancy	Adams		8/29/2018	Gene	Alley	General
8/23/18	Robert	Adams		8/24/2018	david	allie	General
9/17/18	Halvor	Adams		9/7/2018	Eryn	Alloway	General
9/7/2018	Jerry	Adams	General	8/20/18	WA.R.	Almaride	
8/25/2018	David	Addison	General	8/23/18	Joseph	Alonge	
8/24/2018	Kate	Addleson	General	8/19/2018	Ahmed	Alsaady	General
9/7/2018	Catherine	Adkins	General	8/28/2018	Laurie	Alstrom	General
8/16/2018	LeRoy	Adkins	General	9/10/2018	Lee	Alton	General
9/16/2018	Danielle	Adkins	General	8/19/2018	Cristina	Alvarez	General
9/3/2018	M	Adler	General	9/21/2018	Andres	Alvarez	General
9/19/2018	Kristina	Adler	General	9/4/2018	Felipe	Alvarez	General
8/24/2018	Gregory	Agee	General	8/24/2018	Cristina	Alvarez	General
9/11/2018	K	Agyeman	General	8/24/2018	Rene	Alvir	General
8/25/2018	Antero	Aho	General	9/19/2018	Debra	Alvis	General
9/7/2018	Ocean	Aiello	General	9/10/2018	Beatriz	Amberman	General
8/28/2018	Jessica	Aimone	General	8/24/2018	Dean	Amel	General
8/24/2018	Tammy	Akers	General	8/17/18	Jean	Ames	General
8/24/2018	Billy	Akers	General	8/31/2018	Betty Ann	Ames	
8/24/2018	Jeffrey	Akers	General	9/3/2018	Eleanor	Amidon	Technical
9/4/2018	Nora	Alamjamili	General	9/4/2018	Eleanor	Amidon	Technical
8/22/18	Dave	Albert		8/24/2018	Eleanor	Amidon	Other
				8/27/2018	Eleanor	Amidon	Technical

8/30/2018	Eleanor	Amidon	Technical	8/27/2018	Nancy	Arthur	General
8/30/2018	Eleanor	Amidon	Technical	8/22/18	James	Asbell	
9/10/18	Eleanor	Amidon		9/10/18	Morgan	Ashcom	
9/4/18	Elanor	Amidon		9/19/2018	Robert	Asplund	General
8/14/2018	Paul	Amrhein	General	9/10/2018	Francine	Atkins	General
8/28/2018	Ruth	Amundsen	General	8/28/2018	Natasha	Atkins	Other
8/24/2018	Patricia	Anderson	General	8/12/2018	Steve	Atkinson	General
8/26/2018	Herman	Anderson	General	8/24/2018	Barbara	Atkinson	General
8/28/2018	Carole	Anderson	General	9/4/18	Jim	Atwell	
9/21/2018	Peter	Anderson	Technical	8/28/2018	Dawn	Auletta	General
9/10/18	Andy	Anderson		8/14/2018	Oliver	Aurand	General
9/7/2018	Jim	Anderson	General	8/16/2018	David	Austin	General
8/29/2018	Andy	Anderson	General	8/16/2018	Marjorie	Austin	General
9/17/2018	Eugenia	Anderson-Ellis	General	9/7/18	Eligah	Austin	
9/4/18	Rukmini	Ando		8/17/18	Eugene	Autry	
8/28/2018	Haziel	Andrade	General	8/24/2018	Ray	Auville	General
9/10/2018	Thomas	Andrake	Technical	9/4/18	Jonathan	Avallone	
9/18/2018	David	Andre	General	9/7/2018	Charity	Avé-Lallemant	General
9/10/2018	Donald	Andress	General	8/14/2018	Jill	Averitt	General
8/14/2018	Prem	Anjali	Technical	8/24/2018	Sea	Aviar	General
8/9/2018	Joseph Patrick	Anthony	General	9/10/2018	Richard	Avila	General
9/9/2018	Jessica	Applegate	General	9/2/2018	Grover	Ayers	General
8/24/2018	Joseph	Appleton	General	9/7/2018	Woody	Ayers	General
9/21/2018	Ashley	Appolon	General	8/28/2018	Travis	Ayres	General
9/10/18	Ashley	Appolon		8/20/18	Burton	Bacheller	
8/24/2018	Tracey	Aquino	General	8/28/2018	Patty	Bachner	General
8/25/2018	Amelia	Archer	General	8/30/2018	Michael	Bacon	General
9/9/2018	Alberto	Arcos	General	8/20/18	Richard	Bagby	
8/20/18	Arthur	Arden		8/24/2018	Tim	Bagley	General
9/7/2018	Herberth	Arevalo	General	8/24/2018	Robert	Bagnell	General
8/27/2018	Kade	Ariani	General	8/16/2018	Benny	Bailey	General
8/20/18	Robert	Armour		8/24/2018	Donna	Bailey	General
9/12/2018	Allie	Arnold	Other	9/11/2018	John	Bailey	General
8/26/2018	Audrey	Arnold	General	9/10/18	Nelson	Bailey	
9/13/2018	Kevin	Arnold	General	9/4/18	H.N.	Bailey	
8/28/2018	Jack	Arnold	General	8/20/18	Anna	Bain	
8/26/2018	Aubrey	Arrington	General	8/20/18	Frederick	Baird	
9/6/2018	John	Arsenault	General	9/7/2018	Tom	Baise	General
9/10/2018	Diana	Artemis	General	8/19/2018	Richard	Baker	General
8/20/2018	Alfred	Arthur	General	8/24/2018	Pamela	Baker	General
8/24/2018	Cheryl	Arthur	General	8/28/2018	Robert	Baker	General

8/30/2018	Kiquanda	Baker	General	8/20/18	William	Bays	
8/20/18	Mildred	Baker		9/6/2018	Scott	Bazzarre	Other
9/10/2018	Jamshid	Bakhtiari	General	9/4/18	Elizabeth	Bearwell	
8/28/2018	Rosemary	Bakhtiari	General	8/15/2018	Claire	Beasley	General
8/20/18	Roman	Bakke		8/16/2018	Jason	Beck	General
8/24/2018	Jesse	Baldwin	General	8/24/2018	Elaine	Becker	General
8/25/2018	George	Ball	General	9/11/2018	Elaine	Becker	General
9/21/2018	David	Ball	General	9/10/2018	Bonnie	Beckett	General
9/14/2018	Carlton	Ballowe	Other	9/10/2018	Gwendolyn	Beckley	General
8/24/2018	Billy	Ballowe	General	8/24/2018	Ann	Beckner	General
9/7/18	Chris	Bamberg		8/31/18	James	Bee	
9/7/18	J	Bamburg		8/17/18	William	Begomeni	
9/11/2018	Linda	Bancroft	General	8/11/2018	James	Behnke	General
8/24/2018	Tracie	Barger	General	8/24/2018	Eileen	Behrens	General
8/24/2018	Timothy	Barham	General	8/16/2018	Joseph	Belcastro	General
8/24/2018	Mary	Barhydt	General	8/29/2018	Joseph	Belcastro	General
8/17/18	Frank	Bark		9/10/2018	Anna	Bell	General
8/31/2018	Carolyn	Barker	General	9/14/2018	Adam	Bell	General
9/10/2018	Katelyn	Barker	General	8/17/18	Janice	Bell	
9/10/2018	Kayla	Barker	General	8/24/2018	Augie	Bellardine	General
8/20/18	Samuel	Barker		8/24/2018	Henry	Belmonte	General
9/10/2018	Camille	Barnett	General	8/28/2018	Robert	Belyea	General
9/9/2018	Chad	Barrett	General	9/11/2018	Tom	Benevento	General
9/9/2018	Gloria	Barrett	Other	9/10/2018	Dharma	Benincasa	General
8/28/2018	Paul	Barsel	General	9/7/2018	Robert	Benne	General
8/24/2018	Don	Barth	General	8/25/2018	Steven	Benner	General
9/10/2018	Annie	Bartholomew	General	9/4/18	Julia	Bennett	
9/19/18	Mary Ellen	Barton		9/7/2018	Misty	Bennett	General
8/24/2018	Kay	Basnight	General	8/24/2018	Scott	Bennett	General
8/24/2018	Judith	Bassett	General	8/20/18	William	Benson	
8/15/2018	Kate	Bast	General	8/28/2018	Michael	Bentley	General
8/24/2018	Kathy	Batkin	General	8/29/2018	Duane	Benton	General
8/22/18	Nasser	Batoy		8/20/18	James	Beran	
8/24/2018	Deanna	Batton	General	9/11/2018	Maria	Bergheim	Other
8/22/18	Sam	Batton		8/17/2018	Hadnot	Bernard	General
9/10/2018	Colleen	Bauer	General	8/20/18	Francis	Berney	
9/8/2018	Ashby	Baum	General	9/10/2018	Brady	Berry	General
9/10/2018	Elena	Baum	General	9/21/2018	Ambika	Berthias	General
8/25/2018	Dick	Bauman	General	9/21/2018	Heidi	Berthoud	Technical
8/25/2018	Linda	Baumbusch	General	9/21/2018	Heidi	Berthoud	Technical
9/10/2018	Mary K	Baumeister	General	8/18/2018	Glen	Besa	General



8/16/2018	Thomas	Bettis	General	8/30/2018	Maya	Bohler	General
8/28/2018	Jennifer	Beyer	General	8/21/18	Vernon	Bohrer	
9/4/18	Swami	Bhaktananda		8/26/2018	Kathryn	Boileau	General
8/24/2018	Armando	Bianchini	General	9/18/2018	Gretchen	Boise	General
8/20/18	William	Bickley		8/28/2018	Nathan	Bokil	General
9/10/2018	Rose	Bierce	General	8/29/2018	Chris	Bolgiano	Other
8/26/2018	Amy	Biggs	General	9/11/2018	John	Bolish	General
8/20/18	Richard	Bilger		9/26/18	Flora	Bolt	
9/8/2018	Joey	Biller	General	9/19/2018	James	Bolton	Technical
8/29/2018	Brinley	Billings	General	8/24/2018	Stephanie	Bomar	General
8/24/2018	George	Bilyeu	General	9/7/2018	William	Bond	General
8/28/2018	Johnnie	Bishop	General	8/19/2018	Martha	Boneta	General
8/24/2018	Dee	Bivens	General	8/24/2018	Vernon	Boone	General
8/26/2018	Charles	Biviano	General	8/20/18	Richard	Boone	
8/10/2018	Todd	Black	General	9/11/2018	Misty	Boos	General
9/3/2018	Susan	Black	General	8/25/2018	Karen	Bopp	General
9/4/18	Christa	Black		8/16/2018	Robert	Borchert	General
9/3/2018	Reginald	Black	General	8/16/2018	James	Borden	General
9/18/2018	Morgan	Blade	General	8/24/2018	Rebekah	Bordwine	General
8/28/2018	Johnny	Blades	General	8/17/18	Jacque	Borinski	
8/24/18	William	Blafey		8/28/2018	Jes	Bossems	General
9/7/2018	James	Blagg	General	8/17/2018	Charles	Bost	General
9/5/2018	Janie	Blakely	General	8/20/18	Roberta	Bowan	
9/20/2018	Max	Blalock	General	8/20/18	Rebecca	Bowling	
8/20/18	Hugh	Blanchard		8/14/2018	Matt	Bowman	General
8/28/2018	Logan	Blanco	General	9/16/2018	Mary	Bowman	General
8/18/2018	John	Blankenship	General	9/21/2018	Henri	Bowman	General
8/16/2018	James	Bledsoe	General	8/16/2018	Gregory	Boyce	General
8/24/2018	Kenny	Bledsoe	General	9/7/2018	Apryl	Boyce	General
8/16/2018	Deborah	Blizman	General	8/27/18	Danny	Boyd	
8/16/2018	Joseph	Blizman	General	8/24/2018	Susan	Boyd	General
8/24/2018	Blaizen	Bloom	General	9/1/2018	Linda	Boyd	General
8/24/2018	John	Bloom	General	9/7/2018	Linda	Boyd	General
9/19/18	Anne	Blowers		9/7/2018	Sherman	Boyd	General
8/28/2018	Deborah	Blozman	General	8/24/2018	Bruni	Boyden	General
9/19/18	Joel	Blum		9/13/2018	Karen	Boyette	General
8/29/2018	Dane	Blythe	General	9/7/2018	Kathleen	Boyles	General
9/7/2018	Charlene	Bobbitt	General	8/16/2018	Scott	Bracy	General
8/29/2018	Ryan	Boggs	General	9/12/2018	Wilma	Bradbeer	General
9/7/2018	Pam	Bohannon	General	8/24/2018	Louisa	Bradford	General
8/24/2018	Jessw	Bohl	General	8/24/2018	Garry	Bradley	General

8/29/2018	lynn	bradley	General	8/28/2018	Wade	Brooks	General
8/20/18	Tim	Bradley		8/16/2018	Donald	Brown	General
8/20/18	Michael	Bradley		9/3/2018	Madison	Brown	General
8/20/18	Wayne	Bradley		9/9/2018	Kate	Brown	General
9/4/2018	Tim	Bradley	General	8/21/2018	Robert	Brown	General
8/28/2018	Philip	Bradley	General	8/24/2018	Danny	Brown	General
8/24/2018	Susan	Bradshaw	General	8/24/2018	Ryan	Brown	General
8/29/2018	Alan	Bradshaw	General	8/26/2018	Dick	Brown	General
9/10/2018	Daren	Brady	General	8/20/18	Calvin	Brown	
9/4/18	Matthew	Bragg		9/10/18	Warren	Brown	
8/25/2018	Verna	Brainard	General	9/19/18	Errol	Brown	
9/10/2018	Eric	Brakman	Other	9/7/2018	Calvin	Brown	General
8/22/2018	Keith	Brandenburg	General	9/7/2018	Joseph	Brown	General
8/24/2018	Keith	Brandenburg	General	9/14/2018	Laura	Brown	General
9/10/2018	SHERRY	BRANDON	General	8/20/18	Brenda	Browning	
8/24/2018	Elizabeth	Brandt	General	8/24/2018	Stephen	Broyles	General
9/10/2018	Jane	Branham	General	8/24/2018	Douglas	Brubaker	General
8/21/2018	Bonnie	Branham	General	8/16/18	Lowell	Brubaker	
8/24/2018	Benny	Brann	General	9/10/2018	Mellita	Bruce	General
9/7/2018	Paul	Brannan	General	9/7/2018	Yvette	Bruce	General
9/12/2018	Scott	Braswell	General	9/10/2018	Janet	Bruce	General
9/6/18	Marshall	Braylo		9/19/18	Frances	Brune	
8/29/2018	Frank	Brayton	General	8/28/2018	Barbara	Brunson	General
8/24/2018	Kevin	Brehm	General	9/18/2018	Bruce	Brunson	General
8/24/2018	Ariel	Brengle	General	9/10/2018	Hazel	Brutsche	General
9/10/2018	Shannon	Brennan	General	8/28/2018	Judy	Bryan	General
9/6/2018	Ben	Bressette	General	9/18/2018	Judy	Bryan	General
9/7/2018	David	Bridgeman	General	9/10/2018	Thomas	Bryant	General
9/10/2018	Michelle	Bright	Other	8/18/2018	Deborah	Bryant	General
8/20/18	Richard & Elaine	Bright		8/24/2018	Jeff	Bryant	General
9/3/2018	Robert	bright	General	8/24/2018	Mike	Bryant	General
8/30/2018	Crystal	Bright	General	8/24/2018	Debi	Bryant	General
9/10/2018	Elisabeth	Brisebois	General	9/19/18	Christina	Bryza	
8/18/2018	David	Britt	General	8/20/2018	Timothy	Buchanan	General
8/20/18	Bob	Britt		8/20/18	Joan & Banks	Buchanan	
9/21/2018	Kevin	Broad	General	8/24/2018	Marion	Buckland	General
8/16/2018	Tennille	Brock	General	9/10/2018	Margaret	Buel	General
8/16/2018	Megan	Brockwell	General	8/24/2018	Mariela	Buendia-Corrochano	General
9/24/18	Mary	Brook		8/23/18	Jerry	Buff	
8/23/2018	Elnathan	Brooks	General	8/24/2018	John	Buffington	General
9/7/2018	Jane	Brooks	General	8/24/2018	Beverly	Bugos	General

9/1/2018	Victoria	Buksbazen	General	8/24/2018	Julie	Cai	General
9/6/2018	Nicole	Bunce	General	8/24/2018	Charles	Caillier	General
8/16/2018	Walter	Bunyea	General	9/12/2018	Alfred	Calambro	General
9/19/2018	Judith	Bura	General	8/24/2018	Leslie	Calambro	General
8/26/2018	Judi	Burbes	General	8/25/2018	David	Caldwell	General
9/17/2018	Pam	Burbul	General	9/10/2018	Stephen	Caldwell	General
8/24/2018	Lucinda	Burch	General	9/10/2018	Anne	Caldwell	General
8/20/18	Cordell	Burch		9/7/2018	David	Caldwell	General
8/24/2018	Stephanie	Buresh	General	8/24/2018	Rebecca	Calhoun	General
8/20/18	Robert	Burgerer		9/19/2018	Stair	Calhoun	General
8/24/2018	Sandra	Burgess	General	8/25/2018	Michael	Callahan	General
8/26/2018	Michele	Burgman	General	9/8/2018	Gordon	Callahan	General
8/24/2018	Mary	Burke	General	9/4/18	Charles	Calver	
8/28/2018	Mary Lou	Burke	General	9/10/2018	Greg	Camblin	General
9/24/18	Joanne	Burke		8/20/18	W.	Cameron	
9/21/2018	Thomas	Burkett	General	8/20/2018	Shana	Campbell	General
9/24/18	Judy	Burnam		8/24/2018	Cheryl	Campbell	General
8/20/18	Richard	Burner		8/24/2018	David	Campbell	General
9/10/2018	Erin	Burnette	General	8/20/18	Beth	Campbell	
9/21/2018	Erin	Burnette	General	8/20/18	David	Campbell	
8/20/18	Francis	Burnick		8/24/2018	Chris	Campbell	General
8/26/2018	Olga	Burns	General	8/24/2018	Richard	Campbell	General
8/28/2018	John	Burns	General	9/21/2018	Karen	Campblin	General
9/7/2018	Lynne	Burris	General	8/24/2018	Catracho	Canales	General
8/24/2018	Rose	Burroughs	General	9/13/18	David	Cangalosi	
9/19/18	Carolyn	Burruss		9/7/2018	John	Cannon	General
9/6/18	Ann	Burton		8/28/2018	Helen	Cannon	General
9/10/2018	Jean	Busboso	General	9/8/2018	Michael	Cantwell	General
8/24/2018	Nelle	Busch	General	9/3/2018	Linda	Capistran	General
8/27/18	Paul	Busch		8/29/2018	Gregory	Caple	General
9/10/2018	Ben	Butler	General	8/20/18	Joseph	Capolarello	
9/10/2018	Scott	Butler	General	8/20/18		Capowski	
8/24/2018	Frances	Butler	General	9/2/2018	Hannah	Capps	General
8/27/2018	James	Butt	General	9/7/2018	John	Capps	General
9/10/2018	Louise	Buttermore	General	9/20/2018	Joe	Caracciolo	General
8/25/2018	Julie	Buxton	General	8/28/2018	Helen	Cardman	General
8/24/2018	Sonya	Byerly	General	9/7/2018	Alfonso	Cardona	General
9/10/2018	Madlyn	Bynum	General	9/10/2018	Bethany	Cardone	General
9/10/2018	Michael	Byrnes	General	9/12/2018	Jeanette	Carlton	General
8/19/2018	David	Byus	General	8/30/18	George	Carney	
8/26/2018	Rina	Cabrera	General	8/28/2018	George	Carney	General

8/28/2018	Kathie	Carr	General	8/25/2018	Karen	Chauvin	General
8/25/2018	Elizabeth	Carrier	General	8/31/2018	William	Chewning	General
8/20/18	Bob	Carrigan		8/29/2018	Linda	Childs	General
8/24/2018	Ed	Carrigan	General	9/10/2018	Glen	Chilstrom	General
8/18/2018	Elizabeth	Carron	General	9/19/18	Charlie & Gene	Chilton	
9/10/2018	David	Carter	General	8/23/18	Susan	Chisholm	
8/28/2018	Jeremy	Carter	General	9/7/2018	Wendy	Chiu	General
8/24/2018	Marcia	Carter	General	8/28/2018	Wendy	Cho	General
9/10/18	Noble	Carter		8/20/18	Marguerite	Choate	
8/31/2018	Nancy	Carter	General	8/28/2018	Marguerite	Choate	General
8/24/2018	Evelyn	Cartwright	General	9/10/2018	kun	choi	General
9/7/2018	Roy	Casdorph	General	8/28/2018	Paula	Chow	General
9/7/2018	Robert	Case	General	8/24/2018	Carol	Chowdhry	General
8/16/2018	Ronald	Cash	General	9/10/2018	Elizabeth	Christeller	General
9/10/2018	Linda	Cash	General	9/11/2018	Freya	Christensen	General
8/28/2018	Ronald	Cash	General	9/21/2018	David	Christian	General
8/29/2018	KATHRYN	CASKIE	General	8/20/18	Robert	Christian	
9/18/2018	Lawrence	Cassada Jr	General	8/24/2018	Russell	Christian	General
8/24/2018	Renate	Cassady	General	8/24/2018	Sidney	Christman	General
8/25/2018	Jessica	Cassidy	General	8/24/2018	Greg	Christman	General
9/9/2018	Jan	Cassidy	General	8/15/2018	Pat	Churchman	General
9/20/2018	Maggie	Casteilli	General	8/24/2018	Bertha	Church-Reeves	General
9/18/2018	Katey	Castellano	General	9/4/18	Beverly	Ciccolella	
8/24/2018	Beatrice	Castiglione	General	8/28/2018	Gianluigi	Ciovati	General
9/21/2018	Freda	Cathcart	General	9/10/2018	Mike	Clancey	General
8/20/2018	Linda	Catir	General	8/16/2018	Larry	Clark	General
9/9/2018	C.	Catrett	General	8/28/2018	Jonathan	Clark	General
8/24/2018	Silvano	Celi	General	9/10/2018	Sarah	Clark	General
9/11/2018	Melissa	Chadowski	General	9/10/2018	Eloise	Clark	General
9/7/2018	Howard	Chalikian	General	9/10/2018	Marilyn	Clark	General
8/17/2018	Clyde	Chalkley	General	8/24/2018	Diane	Clark	General
9/7/2018	Kenny	Champion	General	8/24/2018	Deny	Clark	General
9/18/2018	Doug	Chancey	General	8/24/2018	Loralee	Clark	General
8/16/2018	Allen	Chandler	General	8/26/2018	Marilyn	Clark	General
9/7/2018	Glenn	Chandler	General	9/11/2018	Stephanie	Clark	General
8/24/2018	Philip	Chaney	General	8/27/18	William	Clark	
9/3/2018	Richard	Chapman	General	8/28/2018	Jonathan	Clark	General
9/4/2018	Susan B.	Chase	Other	8/24/2018	Frances	Clarke	General
8/31/18	Derwood	Chase		9/24/18	Jeanne	Clarkson	
8/30/2018	William	Chase	General	8/20/18	Melinda	Clary	
8/28/2018	Valerie	Chasin	General	8/24/2018	Bethany	Clayton	General

8/28/2018	Jon	Clayton	General	8/24/2018	Bob	Colyer	General
8/30/2018	Kelly	Cleary	General	8/25/2018	Peggy	Combs	General
9/10/2018	Kimberly	Cleland	General	9/7/2018	Fravel	Combs	General
9/11/2018	Audrey	Clement	General	8/24/2018	Heather	Comphe	General
8/20/18	Carl	Clements		9/7/2018	Donna	Compton	General
8/28/2018	robert	cleminson	General	9/10/2018	Alan	Condrey	General
8/14/2018	Bill	Cleveland	General	8/24/2018	Jerry	Conley	General
9/21/2018	Amy	Cleveland	General	8/20/18	Mary	Connell	
8/24/2018	Daniel	Cline	General	8/18/2018	Brenda	Conner	General
8/24/2018	Shelia	Cline	General	8/24/2018	Brenda	Conner	General
9/10/2018	Jarrett	Cloud	General	9/7/2018	Jennifer	Conner-Harris	General
8/24/2018	Donald	Clyde	General	8/24/2018	Thomas	Connolly	General
8/28/2018	Jerry	Coalgate	General	8/25/2018	Charles	Conrad	General
9/5/2018	Courtney	Coates	General	8/22/18	Thomas	Constance	
8/30/2018	Jesslyn	Cobb	General	8/20/18	Gloria	Constantino	
8/24/2018	Diana	Cobbs	General	8/16/2018	Glenn	Cook	General
8/23/18	Edsel	Coble		9/7/2018	James	Cook	General
8/22/2018	Michael	Cogan	General	8/24/2018	Derek	Cook	General
8/28/2018	Richard	Cogan	General	9/7/2018	Hank	Cook	General
8/16/2018	Donald	Cogar	General	8/24/2018	Harry	Cook	General
8/29/2018	Don	Cogat	General	9/7/2018	Wilhelmina	Cooper	General
9/10/2018	Daniel	Cohen	General	8/28/2018	John	Copenhaver	General
9/7/2018	Robert	Cohernour	General	9/9/2018	David	Copper	General
8/24/2018	David	Colangelo	General	9/10/2018	Dave	Copper	General
9/10/2018	Daphne	Cole	General	8/24/2018	John	Corcoran	General
8/16/2018	Marilyn	Coleman	General	8/20/18	Louis & Jackie	Corde	
9/10/2018	Alan	Coleman	General	8/28/2018	Art	Cordes	General
9/12/2018	Corey	Coleman	General	9/2/2018	Steve	cordoba	General
9/7/2018	Sheila	Coleman	General	8/24/2018	Hector	Cordova	General
8/24/2018	Rex	Coleman	General	8/26/2018	Glenn	Corey	General
9/10/2018	Karyn	Collier	General	9/19/18	Cassie	Corey	
8/24/2018	Marcus	Collier	General	8/25/2018	Matt	Cormons	General
8/24/2018	Sherrie	Collier	General	9/10/2018	Amy	Corning	General
9/10/2018	EILEEN	COLLINS	General	8/29/2018	Dianne	Corsello	General
8/28/18	Brenda	Collins		9/4/18	Francesca	Cortinas	
9/7/2018	Patricia	Collins	General	8/17/18	Kelly	Cosby	
8/24/2018	Mary	Collins	General	9/10/18	Patricia	Costello	
8/24/2018	Brenda	Collins	General	8/22/18	John	Cotton	
8/16/2018	Craig	Colombo	General	9/10/2018	Jared	Couch	General
8/24/2018	Xavier	Colon	General	9/10/2018	Ladonna	Coulter	General
8/13/2018	Wilford	Colyer	General	9/19/18	John	Countryman	

9/12/2018	John	Courtney	General	9/11/2018	John	Cruickshank	General
9/18/2018	Doug	Couvillion	General	9/7/2018	Darcy	Crumpler	General
8/31/18	John	Covington SR		8/27/18	Arnoldo	Cruz	
8/24/2018	Christina	Cowan	General	9/7/2018	Marvin	Cruz	General
9/10/18	Cadell	Coward		9/10/18	Sandra	Cuddy	
9/12/18	Cabell	Coward		9/10/2018	Ben	Cuker	General
8/16/2018	Helen	Cox	General	8/24/2018	Benjamin	Cuker	General
9/10/2018	CW	Cox	General	9/19/2018	Emilie	Culbertson	General
9/10/2018	Kirk	Cox	Technical	8/17/18	Bonnie	Cullen	
9/18/2018	Ricky	Cox	General	9/7/2018	Ronnie	Cullop	General
9/18/2018	Ann	Cox	General	8/24/2018	Earnest	Cumbie	General
8/17/18	Roy	Cox		9/4/2018	Guy	Cumby	General
9/7/2018	James	Cox	General	8/25/2018	Pat	Cummings	General
8/28/2018	Mary	Coy	General	9/9/2018	Alexa	Cummings	General
9/9/2018	John	Coyle	General	8/24/2018	Sally	Cummings	General
8/16/2018	Jamie	Crabtree	General	8/28/2018	Storm	Cunningham	General
9/10/2018	Linda	Crafton	General	9/14/18	Maureen	Cunningham	
8/30/2018	Rebecca	Craig	General	8/20/18	John	Cupp	
8/25/2018	Barbara	Crane	General	9/6/2018	Denise	Curry	General
8/20/18	Pam	Crankill		9/10/18	Jeffrey	Curry	
8/20/18	Daniel & Patricia	Crannell		9/10/2018	Priya	Curtis	General
9/21/2018	William	Cranor	General	9/10/2018	Alda	Curtis	General
8/20/18	Ed	Craun		9/10/2018	Virginia	Cutchin	General
9/10/2018	Lana	Craven	General	9/6/2018	Quinci	Cuthbert	General
9/12/2018	Susan	Crawford	General	9/10/2018	Camille	Cutler	General
8/20/18	Mark	Crean		8/27/2018	Dragutin	Cvijanovic	General
8/24/2018	Tracy	Creasy	General	8/28/2018	Swami	Daasyaananda	General
9/7/2018	Abby	Credicott	General	8/24/2018	James	Dabney	General
9/10/2018	Anne	Cressin	General	8/24/2018	William	Dabney	General
8/24/2018	Jay	Crews	General	9/12/2018	Gail	Dady	General
9/4/18	Florence	Cristelli		8/28/2018	Elizabeth	Dahmus	General
8/24/2018	Ann	Crittenden	General	8/24/2018	Becky	Daiss	General
8/24/2018	Vanda	Croasdale	General	9/17/18	Tina	Dakun	
9/11/2018	Paul	Cronin	General	8/29/2018	Tina	Dakun	General
9/10/2018	Paula	Crooks	General	8/28/2018	Jeffrey	Daley	General
9/10/2018	Paula	Crooks	Other	9/4/18	Sheila	Danaher	
8/24/2018	Madison	Crouch	General	8/27/18	Dave	Daniel	
8/28/2018	Peter	Crouch	General	8/25/2018	Elliot	Daniels	General
9/2/2018	John	Crowgey	General	9/9/2018	Grace	Daniels	General
8/20/18	Stanley	Crown		9/12/2018	Patricia	Daniels	General
8/21/2018	Linda	Croxson	General	8/28/2018	Ari	Daniels	Other

8/24/2018	Clay	Darby	General	8/29/2018	Russell	Deane	General
9/18/2018	Kathleen	Darrah	General	8/24/2018	Natalie	Deboer	General
9/10/2018	Diane	Darvey	General	8/30/2018	Jon	DeBoer	General
9/4/18	Elizabeth	Daughtry		8/17/2018	Charles	DeBusk	General
9/10/2018	Donald	Davenport	General	9/21/2018	Rebecca	Deeds	General
8/20/18	Mary	Davenport		9/10/2018	Anna	Dees	General
8/24/2018	McGee	David	General	8/24/2018	Bob	DeGregory	General
8/24/2018	Charles	Davidson	General	8/24/2018	Elliott	DeJarnette	General
9/11/2018	James	Davidson	General	8/24/2018	Martha	DeJarnette	General
9/7/2018	Edward	Davidson	General	8/17/2018	Andres	Del Pino	General
8/24/2018	William	Davies	General	8/24/2018	Maria-Celeste	Delgado-Librero	General
8/28/2018	Elizabeth	Davies	General	9/7/2018	Katherine	Delis	General
9/21/2018	William	Davies	General	9/18/2018	Margaret	DeMayo	General
8/11/2018	Danny	Davis	General	9/10/2018	T	Denby	General
8/14/2018	Ed	Davis	General	8/28/2018	Kenneth	Dennis	General
8/17/2018	Debbie	Davis	General	9/13/2018	Nancy	Dennis	General
9/7/2018	Victoria	Davis	General	8/30/18	Charles	Dennison II	
8/24/2018	Darrell	Davis	General	9/10/2018	Robert	Denniston	General
8/27/2018	Tamekka	Davis	General	8/21/2018	william	Dent	General
8/20/18	Lynwood & Mary	Davis		8/24/2018	William and Judith	Dent	General
9/7/18	Herman	Davis		8/24/2018	Edward	Derdeyn	General
9/7/2018	Douglas	Davis	General	8/29/2018	Brian	Derreberry	General
9/7/2018	Pat	Davis	General	8/26/2018	Michael	Dervan	General
8/24/2018	Glenda	Davis	General	9/4/18	Mary	Deschenes	
8/29/2018	James	Davis	General	8/24/2018	John	Desimone	General
8/29/2018	Richard	Davis	General	8/29/18	Benjamin	Dessert	
9/13/2018	Robert	Dawson	General	8/31/2018	Scott	Detar	General
8/17/18	Jerry	Dawson		9/21/2018	William	Detwiler	General
8/25/2018	Susan	Dax	General	8/20/18	Douglas	Detwiler	
8/24/2018	Kathy	Day	General	8/24/2018	Arnold	DeWald	General
9/4/18	Robert	Day		8/16/2018	Gary	DeWitt	General
9/12/2018	Elena	Day	General	8/24/2018	Jeffrey	Diamond	General
9/21/2018	Swami	Dayananda	General	8/24/2018	Clarice	Dibble	General
9/21/2018	Swami	Dayananda	Technical	8/24/2018	Timothy	Dichiara	General
9/14/2018	Elizabeth	Daystar	General	8/20/18	Garrett	Dickest	
8/20/2018	Ronnie	De Guzman	General	8/28/2018	Jane	Dickson	General
8/29/2018	Frank	De Mary	General	8/25/2018	Diane	Didonna	General
8/28/2018	Philip	De Vos	General	9/21/2018	Dan	Diefenbach	General
9/21/2018	Spenser	Dean	General	9/19/2018	Pat	Dietch	General
9/19/18	Lillian	Dean		8/16/2018	John	DiGeronimo	General
8/24/2018	Gene	Dean	General	8/30/2018	Edward	Dillon	General

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9/10/2018	Nancy	Dimock	General	8/28/2018	Norman	Dowling	General
8/19/2018	Donald	Dinch	General	8/28/2018	Rita	Dowling	General
8/24/2018	Tony	Dinch	General	9/18/2018	Eleanor	Downey	General
8/20/18	Lisa	Dinkel		8/24/2018	Jenna	Downing	General
8/28/2018	Mamadou	Diong	General	8/24/2018	Ethan	Downing	General
9/11/2018	Mark	Director	General	8/24/2018	Tylene	Downing	General
8/24/2018	Jim	Divelbiss	General	8/24/2018	Daryl	Downing	General
9/4/18	Swami	Divyananda		8/20/18	Robert	Downing	
9/8/2018	Guy	Dixon	General	8/28/2018	Robert	Downing	General
9/9/2018	Allyson	Dixon	General	8/18/2018	Leslie	Downs	General
9/10/2018	Jim	Dixon	General	9/10/2018	Gary	Doxtater	General
8/29/2018	Sophia	Dixon	General	8/27/18	L.F.	Draper	
9/10/18	Guy	Dixon		9/10/2018	Joel	Drembus	General
9/2/2018	Allen	Dobbs	General	8/20/18	Dennis	Dressler	
9/7/2018	Donna	Dobbs	General	8/28/2018	Marilyn	Drucker	General
8/24/2018	Margaret	Dockery	General	9/3/2018	Ronald	Drumheller	General
8/20/18	Wayne	Dodd		9/7/2018	Nina	Drumheller	General
9/9/2018	Gregory	Dodson	General	9/7/2018	Frederick	Dublin	General
9/7/2018	Anna	Dolga	General	8/25/2018	Saundra	Dudley	General
8/28/2018	Traryn	Dollings	General	9/7/2018	Peter	Duffy	General
8/16/2018	Mary	Donald	General	9/4/18	Meredith	Dufour	
8/16/2018	william	Donald	General	9/4/18	Casey	Dugan	
8/20/18	Leo	Donald		8/24/2018	Steve	Dugger	General
8/27/2018	Sharon	Donato		8/17/2018	Susan	Duke	General
9/10/2018	Pamela	Donehower	General	9/3/2018	Gale	Duke	General
8/20/2018	James	Donlin	General	9/7/18	Michael	Dulin	
8/24/2018	John	Donnelly	General	9/7/18	Diana	Dulin	
8/29/2018	John	Donner	General	8/20/18	John	Dunaway	
9/10/2018	mike	dono	General	9/4/18	Sam	Dunaway	
8/25/2018	Adam	D'Onofrio	General	9/11/2018	Sierra	Duncan	General
9/9/2018	Cristi	Donoso	General	9/10/2018	Kimberly	Duncan	General
9/4/18	Paul	Dorel?		9/7/18	Andrew	Duncan	
9/12/2018	Cyndy	Dorn	General	8/24/2018	Christopher	Dunn	General
8/26/2018	Judith	Doty	General	8/24/2018	Brian	Dunn	General
9/10/2018	Danny	Douglas	General	8/24/2018	Christy	Dunn	General
9/21/2018	William	Douglas	General	9/4/18	Malcolm	Dunston	
8/24/2018	Bill	Douglas	General	9/21/2018	Cuong	Duong	General
9/20/2018	Laura	Douglass	General	8/24/2018	Cameron	Dupuis	General
8/16/2018	Jeffrey	Dowdell	General	8/26/2018	Julia	Durand	General
8/24/2018	Larry	Dowdy	General	8/29/2018	Edward	DuRocher	General
8/22/18	Clifford	Dowley		8/20/18	Charles	Durrer	



8/25/2018	Nancy	Duryea	General	9/19/18	Hannah	Eller	
9/10/2018	Leslie	Duvall	General	9/7/2018	Lynda	Ellington	General
8/24/2018	Liz	Dyer	General	9/7/2018	Joy	Elliott	General
9/8/2018	Jamie	Dymond	General	9/10/2018	Keith	Elliott	General
9/12/2018	Katy	Dynes	General	9/10/2018	Tom	Elliott	General
9/12/2018	Greg	Dynia	General	8/28/2018	Keith	Elliott	General
9/18/2018	Larysa	Dyrszka	Technical	9/10/18	Tom	Elliott	
8/16/18	John	Dyson		9/10/2018	Nicole	Ellis	General
9/1/2018	Margaret	Dyson-Cobb	General	9/10/2018	Judith	Ellis	General
9/7/2018	Warren	Earhart	General	9/12/2018	Lara	Ellis	General
8/28/2018	David	Earles	General	8/24/2018	Robert	Ellis	General
8/19/2018	Lonnie	East	General	8/24/2018	Christopher	Ellmers	General
8/14/2018	Susie	Eastridge	General	8/20/2018	Jason	Elmer	General
8/24/2018	Ralph	Eaton	General	8/22/18	Joseph	Elmer	
8/29/2018	Wendy	Ebersberger	General	9/10/2018	Mimi	Elrod	General
8/28/2018	Burks	Echols	General	8/20/18	Boyd	Elswick	
8/20/18	Thomas	Eckhoff		9/8/2018	Jonathan	Ely	General
9/10/2018	Barbara	Ecton	General	8/28/2018	Samantha	Embrey	General
8/24/2018	Henry	Ecton	General	9/10/2018	Carole	Emerson	General
8/29/2018	janet	eddy	General	9/7/2018	Wray	Emerson	General
9/12/2018	Caolan	Eder	General	8/24/2018	Abel	Encinas	General
9/10/2018	Tyler	Edge	General	9/12/2018	Carrie	England	General
8/20/18	Lee	Edgerton		8/16/2018	Edward	Engle	General
8/24/2018	Thomas	Edmonds	General	9/11/2018	Heather	Engman	General
9/7/2018	Ephraim	Edmunds	General	8/24/2018	Mary Catherine	Epatko	General
8/17/2018	Steve	Edwards	General	9/7/2018	Samuel	er	General
9/10/2018	Joe	Edwards	General	8/24/2018	Cynthia	Erb	General
9/10/2018	Ron	Edwards	General	9/14/2018	Cynthia	Erb	General
8/24/2018	Jay	Edwards	General	8/24/2018	Josephine	Erkiletian	General
8/28/2018	Dorothy	Edwards	General	8/24/2018	Benjamin	Erwin	General
8/24/2018	Peter	Egan	General	8/19/2018	Naomi	Esau	General
8/24/2018	Marion	Eggenberger	General	9/10/2018	Patricia	Esch	General
8/29/2018	Ted	EHRENFRIED	General	9/10/2018	Susan	Eschenroeder	General
8/28/2018	Erica	Ehrhardt	General	8/23/2018	Victor	Escobar	General
8/20/18	Richard	Eichler		8/23/2018	Victor	Escobar	General
8/20/18	Richard	Eichler		9/7/2018	Wesley	Ether	General
8/20/18	Gary	Eichler		8/28/2018	Lynne	Euse	General
9/21/2018	Ross	Eisenberg	Other	9/7/2018	Donald	Evans	General
9/4/18	Patricia	Eldridge		9/10/2018	Hersha	Evans	General
8/17/2018	Stephen	Eliot	General	8/24/2018	David	Evans	General
8/29/2018	Stephen	Eliot	General	8/24/2018	Brian	Evans	General

8/24/2018	Teresa	Evans	General	8/17/2018	James	Ferrara	General
9/21/2018	Elise	Evans	General	8/16/2018	John	Ferrell	General
9/21/2018	Taylor	Evans	Other	8/20/18	Arlene	Fertal	
8/29/18	Harry	Evans		9/8/2018	Maria	Fiadeiro	General
8/31/18	Jerold	Evans		8/25/2018	Shaw	Fici	General
8/31/2018	Thomas	Evans	General	8/25/2018	Gretchen	Fidler	General
9/6/2018	Wendy	Evans	General	8/24/2018	Keith	Fieldhammer	General
8/24/2018	Steven	Evans	General	9/20/18	Ronald	Figg	
9/24/18	Carol	Even		8/25/2018	Doris	Filer	General
8/24/2018	Keith	Everton	General	8/28/2018	Lisa	Filipy	General
9/8/2018	Michael	Ewing	General	8/11/2018	Clifford	Fillhart	General
9/19/2018	John	Ewing	General	9/11/2018	Elizabeth	Fine	General
8/29/18	Tom	Ewing		8/21/18	George	Finlayson	
9/12/18	Jeffrey	Eyth		9/13/2018	Sherri	Finley	General
9/7/2018	WeldWorx	Fabrication	General	9/21/2018	Mary	Finley-Brook	Technical
8/21/2018	Kathleen	Fabricius	General	9/11/2018	Al	Fioretti	General
9/21/2018	Kate	Fagan	General	9/12/2018	Ian	Firestone	General
9/7/2018	Rosemary	Fahed	General	9/10/2018	Shawn	Firth	General
9/10/2018	Natalie	Fahmy	General	8/24/2018	Richard	Firth	General
8/23/18	Lyman	Fairbanks		9/13/2018	Orion	Fiscella	General
8/29/2018	Marcia	Fairman	General	8/20/2018	Margaret	Fisher	General
9/7/2018	Shelby	Fall	General	8/24/2018	Kimberly	Fisher	General
8/29/2018	Maxine	Falyar	General	9/7/2018	Troy	Fisher	General
8/24/2018	Charles	Fansler	General	8/24/2018	Kenneth	Fisher	General
8/29/2018	Larry	Farmer	General	8/24/2018	John	Fitzpatrick	General
9/10/2018	Joan	Farrell	General	8/29/18	Connie	Fitzsimmons	
8/29/2018	valerie	farrell	General	9/21/2018	Lakshmi	Fjord	Technical
9/7/2018	Gail	Faulkner	General	8/26/2018	Irwin	Flashman	General
9/7/2018	Ben	Faure	General	8/24/2018	Shira	Flax	General
8/16/2018	George	Fearnow	General	8/28/2018	Mitchell	Fleisher	General
8/28/2018	George	Fearnow	General	8/20/18	Marlene	Fleming	
9/10/2018	Karen	Fedorov	General	8/17/18	Lovell	Flinn	
9/10/2018	Karen	Fedorov	General	8/30/2018	Laura	Flores	General
8/24/2018	Steffanie	Feichter	General	9/7/18	Marie	Flowers	
8/24/2018	Donna	Feirtag	General	9/10/18	Marie	Flowers	
8/11/2018	Kathy	Feller	General	9/24/18	Marie	Flowers	
9/12/2018	Leslie	Fellows	General	9/7/2018	Karsten	Flowers	General
8/24/2018	Kimberly	Fenton	General	8/17/18	James	Fluharty	
8/24/2018	Amy	Fentress	General	8/24/2018	Larry	Folmar	General
9/8/2018	Kay	Ferguson	Other	8/20/18	David	Folpy	
9/13/18	Kay	Ferguson		8/28/2018	David	Forbes	General

8/25/2018	Betty	Ford	General	8/28/2018	Alyssa	Freeman	General
8/20/18	Jane	Ford		9/12/18	Allan	Freeman	
9/4/18	Cynthia	Forga		8/24/2018	Angelica	Freitag	General
9/3/2018	Jody	Forman	General	8/20/18	William	Frey	
8/24/2018	Teresa	Forrester	General	8/16/2018	John	Fringer	Technical
9/11/2018	Nancy	Foster	General	8/16/2018	Lawrence	Fritz	General
9/10/2018	Rebecca	Foster	General	8/28/2018	Deborah	Fritzler	General
9/10/2018	Don	Fowler	General	8/16/2018	Nathan	Frost	General
9/12/2018	Ray	Fowler	General	9/4/18	Michael	Fruscianle	
8/24/2018	Ray	Fowler	General	8/24/2018	Danual	Fugate	General
8/17/18	Robert	Fowler		9/10/2018	Sierra	Fulcher	General
10/9/18	Mike	Fowler		9/10/2018	William	Funk	General
8/16/2018	John	Fox	General	8/16/2018	John	Furr	General
8/16/2018	Ken	Fox	General	8/29/18	Owen	Furr	
9/7/2018	Kenny	Fox	General	8/20/2018	Peg	Futrell	Other
9/10/2018	Kathleen	Fox	General	9/21/2018	Peg	Futrell	Other
9/12/2018	Abby	Fox	Other	8/26/2018	Doris	Gaddis	General
8/27/2018	John	Fox	General	8/28/2018	Sylvia	Gale	General
9/14/2018	Kathleen	Fox	General	8/29/2018	George	Galeota	General
8/24/2018	Glenn	Fox	General	8/20/18	Dick	Gallagher	
9/4/18	Josaphine	Frame		8/29/2018	Kristin	Gallanosa	General
9/11/2018	Lee	Francis	General	9/12/2018	Courtney	Galligan	General
9/10/2018	Felicity	Francis	General	8/24/2018	Gordon	Gallimore	General
8/24/2018	James	Francis	General	9/18/2018	Margaret	Galloway	General
9/7/2018	Emmy	Franco	General	9/10/2018	John	Gammon	General
8/25/2018	John	Franke	General	8/28/2018	John	Gammon	General
9/5/2018	Sue and Bill	Frankel-Streit	Other	9/12/2018	Roy	Gamse	General
8/22/18	Glenda	Franklin		9/7/18	Wilma	Ganet	
9/10/2018	Tom	Franko	General	9/6/2018	Thomas	Gannon	General
8/16/2018	Robert	Frashure	General	9/12/2018	Susanne	Gaon	General
9/10/2018	Mary	Fravel	General	8/24/2018	Charlotte	Gardiner	General
8/24/2018	Karen	Frazer	General	9/4/18	Joseph	Gardino	
9/7/2018	Tom	Frazier	General	9/4/18	Barbara	Gardino	
9/17/2018	Loman	Frazier	General	8/24/2018	Kristen	Gardner	General
9/11/2018	Gabriella	Freckmann	General	8/17/18	George	Gardner	
8/20/18	Philip	Freda		8/16/2018	Chimere	Garland	General
9/10/2018	Aaron	Freed	General	9/6/2018	Molly	Garrett	General
9/5/2018	Mike	Freeland	Other	8/28/2018	Colleen	Garrison	General
9/10/2018	Mike	Freeland	General	8/28/2018	John	Garrity	General
9/7/2018	Rachel	Freeman	General	8/25/2018	Nancy	Garvey	General
8/24/2018	Alyssa	Freeman	General	9/6/2018	Donna	Gasapo	General

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8/23/18	Judith	Gaskin		8/26/2018	Alexis	Gilman	General
8/20/18	O.F	Gasser, Jr.		8/28/2018	Gary	Giltz	General
8/24/2018	Reginald	Gatling	General	9/20/2018	Susan	Ginsberg	Other
8/27/18	Dennis	Gaudett		9/7/18	Larry	Girvin	
9/10/18	Dennis	Gaudett		9/17/18	Deborah	Gittens	
8/27/18	Dolores	Gaulett		8/24/2018	Marion	Glass	General
8/24/2018	Ray	Gaut	General	8/24/2018	Lloyd	Gleeson	General
8/29/2018	Mary	Gauthier	General	8/24/2018	Henry	Glenn	General
9/21/2018	Molly	Gauthier	General	8/17/18	Robert	Glick	
9/10/2018	Karen	Gavidia	General	9/12/2018	Gerald	Glickman	General
9/10/2018	Lydia	Gayle	General	9/14/2018	Heather	Glunt	General
9/6/2018	Kidest	Gebre	General	8/16/2018	Norvell	Godsie	General
9/10/18	Kidest	Gebre		9/10/2018	Stephanie	Goering	General
8/24/2018	Bert	Geddy	General	8/24/2018	Larry	Goetz	General
8/28/2018	Christopher	Gee	General	8/24/2018	Janice	Goff	General
8/16/2018	Jeffery	Gehbauer	General	8/24/2018	Kathy	Goff	General
9/7/2018	Jeffrey	Gelina	General	8/28/2018	Donna	Gold	General
8/24/2018	Barbara	Gentry	General	8/24/2018	Kirsty	Goldberg	General
8/25/2018	Misha	George	General	9/7/2018	JR	Golliday	General
9/21/2018	Steve	George	General	9/19/18	Kimberly	Gomez	
9/12/2018	Virginia	Germino	General	8/24/2018	Art	Gonz	General
8/20/18	Walter	Gerner		8/24/2018	Janet	Gooch	General
8/20/18	Barbara	Gerner		9/10/2018	Colby	Goodman	General
8/28/2018	Marcia	Geyer	General	8/24/2018	Nate	Goodman	General
9/10/2018	Mary	Gibbs	General	8/16/2018	Bobby	Gordon	General
8/11/2018	William	Gibson	General	8/28/2018	Emma	Gordon	General
9/10/2018	Amy	Gibson	General	9/21/2018	Bobby	Gordon	General
9/16/2018	Pam & Royce	Gibson	Technical	8/29/2018	Bobby	Gordon	General
8/30/18	Edward	Gibson		8/27/2018	Nancy	Gorry	General
8/28/2018	Sue	Gier	General	9/11/2018	Felix	Gostel	General
9/10/2018	Daniel	Giesy	General	9/10/2018	Barbara	Gottlieb	Technical
8/24/2018	Theo	Giesy	General	8/28/2018	Erika	Gottschalk	General
8/12/2018	Freddie	Giff	General	9/7/2018	Frank	Gough	General
8/24/2018	Ken	Gigliello	General	8/20/18	John	Goyer	
8/24/2018	Gary	Gilbert	General	9/13/2018	Angela	Graciani	General
8/22/18	Orin	Gilbert		8/25/2018	Chas	Graf	General
9/10/2018	Franklin	Gilles	General	8/24/2018	Mary	Graf	General
8/30/2018	Franklin	Giles	General	8/28/2018	Carolyn	Grafton	General
9/10/2018	Peggy	Gilges	General	8/20/18	Kathy	Graham	
9/10/18	Elba	Gillian		9/10/2018	J.E.	Graham-Landau	Other
8/24/2018	Doug	Gillis	General	8/28/2018	Terrence	Grandstaff	General

8/22/18	Robert	Grannivy		9/12/2018	William	Guthrie	General
9/7/2018	Cheryl	Grant	General	9/7/2018	Terri	Guttiere	General
9/18/2018	Kathlynn	Grant	General	8/24/18	Gretchen	Gvoth	
9/1/2018	Lynn	Gravelle	General	8/17/2018	Clayton	H.	General
8/29/2018	Lynn	Gravelle	General	9/11/2018	Linda	Haas	General
8/24/2018	Billy	Gravely	General	9/2/2018	Kelly	Haber	General
8/29/2018	Lawrence	Graves	General	9/10/2018	Kelly	Haber	General
8/24/2018	Judy	Gray	General	9/10/2018	Joanne	Habrecht	General
9/7/2018	Jeff	Graybeal	General	8/24/2018	Stephen	Hackney	General
9/10/2018	William	Grayson	General	8/10/2018	David	Hadley	General
8/23/18	Kenneth	Green		9/4/2018	Thomas	Hadwin	Other
8/24/2018	Jon	Greenburg	General	8/24/2018	Patricia	Hagarty	General
8/28/2018	Danielle	Greene	General	8/25/2018	Phyllis	Hagmaier	General
9/13/2018	Laura	Greenleaf	Other	9/7/2018	Douglas	Hahn	General
9/4/18	Richard	Greenstone		9/19/2018	Meredith	Haines	General
9/4/18	Satya	Greenstone		8/27/18	Keith	Halbohn	
9/11/2018	Don	Greenwood	General	8/27/18	Marion	Halbohn	
8/24/18	Stanley	Greer		9/7/2018	Leah	Hale	General
8/25/2018	Rich	Gregory	General	9/7/2018	James	Hale	General
9/9/2018	Jason	Gregory	General	9/10/2018	Judy	Hall	General
8/24/2018	Jason	Gregory	General	9/12/2018	Robert	Hall	General
8/28/2018	Oliver	Gregurevic	General	9/19/2018	Ruth	Hall	General
9/10/2018	Peter	Greider	General	8/27/18	Raymond	Hall	
8/31/2018	John	Gress	General	9/4/18	Ruth	Hall	
8/14/2018	Anne	Grier	General	9/7/2018	Teresa	Hall	General
8/26/2018	Roger	Grieve	General	9/5/2018	Mary	Hallock	General
9/10/2018	Alexandra	Griffin	General	9/8/2018	Jessica	Halpin	General
8/29/2018	Stacey	Grimsley	General	9/10/2018	Katiey	Hamblen	General
8/27/2018	Joshua	Griset	General	8/28/2018	Pamela	Hambleton	General
9/9/2018	Caroline	Griswold	General	8/24/2018	Ali	Hamdallah	General
8/24/2018	Randall	Griswold	General	8/25/2018	Sarah-Beth	Hamer	General
9/10/2018	Franklin	Gropen	General	8/27/2018	Jennifer	Hamilton	General
9/11/2018	Laura	Grove	General	8/20/18	Roger	Hamlin	
9/7/2018	Sheila	Groves	General	8/16/2018	Mike	Hammock	General
9/20/2018	Erin	Gulick	General	8/24/2018	Jack	Hammond	General
9/4/18	Swami	Gunicharananda		8/16/2018	Lee	Hamric	General
9/10/2018	Chris	Gunn	General	8/24/2018	Ruth	Hamric	General
8/24/2018	Patricia	Gunnels	General	9/4/18	Swami	Hamsananda	
8/24/2018	Gadaisyia	Gupton	General	8/27/18	Dolores	Hanes	
8/28/2018	Donald	Gurney	General	8/24/2018	Robert	Hankins	General
8/25/2018	David	Gussman	General	8/29/2018	Bradley	Hanks	General

9/7/2018	Joey	Hanlon	General	8/20/18	Richard	Hartman	
8/28/2018	Kyle	Hannah	General	9/7/2018	Juanita	Hartshorn	General
9/7/2018	Brad	Hanscom	General	8/20/18	Stuart	Harve	
8/16/2018	Freddie	Hanselmann	General	8/16/2018	Stuart	Harvey	General
9/10/2018	Steve	Hansen	General	8/21/18	William	Haskins	
9/18/2018	Jaydee	Hanson	General	8/17/18	Khan	Hassan	
9/6/2018	Kenda	Hanuman	General	9/10/18	Thomas	Hassler	
9/10/2018	Nabilah	Haque	General	9/10/2018	Susan	Hastings	General
9/4/18	Matthew	Harbut		8/20/18	Walter	Hatcher	
8/25/2018	Mary	Hard	General	9/18/2018	Chris	Hatfield	General
9/10/2018	Melanie	Hardy	General	8/24/2018	Samuel	Hathorm	General
8/24/2018	Melanie	Hardy	General	8/28/2018	Sam	Hathorn	General
8/29/18	Thomas	Harkins		8/24/2018	Janna	Hattaway	General
8/20/18	Troy	Harlow		8/14/2018	Carolyn	Haupt	General
8/24/2018	Pansy	Harman	General	9/10/2018	Carolyn	Haupt	General
9/21/2018	Becci	Harmon	General	8/22/2018	Gene	Haviland	General
8/29/18	Wayne	Harp		9/18/2018	Madeleine	Hawks	General
9/10/2018	April	Harper	General	8/24/2018	John	Haydock	General
8/24/2018	Alan	Harper	General	8/25/2018	Joan	Hayes	General
8/24/2018	Wil	Harper	General	8/24/2018	Rona	Hayes	General
8/29/18	Patricia	Harpine		8/28/2018	Burnley	Hayes	General
8/30/18	Freeman	Harrell		9/7/2018	Earl F.	Haynes	General
9/10/2018	Jane	Harrington	General	9/7/2018	Sonya	Heath	General
8/20/18	David	Harrington		8/24/2018	Colin	Hebert	General
9/11/2018	Deborah	Harris	General	8/29/2018	Mitchell	Hecht	General
8/27/2018	Cid	Harris	General	8/13/2018	Donald	Hedgebeth	General
9/10/2018	Celie	Harris	General	8/24/2018	Roger	Hedrick	General
9/12/2018	Kimberly	Harris	General	8/29/2018	John	Heil	General
9/7/2018	Victoria	Harris	General	9/12/2018	Philip	Heinegg	General
8/24/18	Gisela	Harris		8/28/2018	Madeline	Helbraun	General
8/24/2018	Cathy	Harris	General	9/10/2018	Linda	Helgesen	General
8/24/2018	Mary	Harris	General	8/30/2018	Teresa	Helton	General
8/24/2018	Iris	Harris-Nichols	General	9/7/2018	Tommy	Henderson	General
8/21/2018	Richard	Harrison	General	8/28/2018	Diana	Henderson	General
8/24/2018	Sara	Harrison	General	9/13/2018	Douglas	Hendren	General
8/27/2018	Robert	Harrison	General	8/20/18	Robert	Henke	
8/20/18	Joan	Harrup		8/20/18	Clyde	Henkel	
8/17/2018	Joseph	Hart	General	8/20/2018	Brian	Henley	General
9/7/2018	Midge	Harter	General	8/24/2018	Joseph	Henley	General
9/7/2018	Gary	Hartle	General	9/7/2018	Fern	Henley	General
9/10/2018	James	Hartley	General	8/29/2018	dave	henley	General

8/24/2018	George	Hennigan	General	9/19/18	Jonathan	Hintze	
8/25/2018	Mike	Henrietta	General	8/28/2018	Brian	Hires	General
9/6/2018	Mary	Hensley	Other	8/24/2018	Harriet	Hirsch	General
8/24/18	Delure	Hensley		8/30/2018	Ken	Hislop	General
8/30/2018	Mary	Hensley	General	8/24/2018	John	Hitchins	General
8/28/2018	Heather	Henthorne	General	8/27/2018	George	Hite	General
9/10/2018	chet	hepburn	General	9/10/2018	Judith	Hixson	General
8/28/2018	Chet	Hepburn	General	8/24/2018	Nghi	Ho	General
8/30/2018	Brent	Hepner	General	8/26/2018	Lisa	Ho	General
9/10/2018	Volkmar	Heratsch	General	8/25/2018	Michael	Hoak	General
8/16/2018	Carolyn	Herbert	General	8/28/2018	Maria	Hobson	General
9/7/2018	David	Hericks	General	8/28/2018	Pat	Hodge	General
9/4/18	Robert	Herman		8/31/2018	Paul	Hodge	General
9/10/2018	Gail	Hermosilla	General	8/28/2018	Kim	Hodges	General
9/9/2018	Michaela	Hernandez	General	8/24/2018	Klif	Hodgkin	General
8/24/2018	Deborah	Heron	General	8/24/2018	Vitaly	HodiukOff	General
9/10/2018	Karen	Herrell	General	8/24/2018	Tom	Hoffman	General
8/27/2018	Lynne	Hess	General	8/20/18	Roy	Hoffmann	
9/12/2018	Sharon	Hesse	General	8/27/2018	James	Hofmann	General
8/24/2018	James	Hevener	General	8/29/2018	Shawn	Hogan	General
8/20/18	Lacy	Hevener		8/20/2018	Barbara	Hoggood	General
9/19/2018	Jean	Hiatt	General	8/29/2018	Barbara	Hoggood	General
9/21/2018	Tim	Hickey	General	8/29/2018	Barbara	Hoggood	General
10/5/18	Jim	Hickey		8/25/2018	Isabelle	Holden	General
9/7/2018	David	Hicks	General	8/24/2018	Grace	Holden	General
8/20/18	W.	Hiesley		8/20/18	Faye	Holland	
9/13/2018	Lucy	Higgins	General	9/4/18	Angie	Holland	
9/14/18	Nancy	Hight		9/10/2018	Karen	Holliday	General
8/16/2018	Diana	Hil	General	8/17/18	R.J.	Hollinger	
8/25/2018	Lorna	Hill	General	9/7/2018	Natasha	Holloway	General
9/11/2018	Mike	Hill	Other	8/28/2018	Kathryn	Holmes	General
9/8/2018	Pamela	Hill	General	9/7/2018	Michael	Holmes	General
8/28/2018	Sarah	Hill	General	8/28/2018	RODNEY	Holmes	General
8/29/2018	Diana	Hill	General	9/10/2018	Sandra	Holt	General
9/7/2018	Elaine	Hillers	General	8/22/18	Patsy	Holt	
8/29/2018	Roger	Hillers	General	8/22/18	John	Holt	
9/10/2018	Judy	Hinch	General	8/20/18	Michael	Holtz	
8/28/2018	Judy	Hinch	General	8/24/2018	Kimberly	Homer	General
9/7/18	Alice	Hines		9/10/2018	Cinthia	Honeycutt	General
9/7/2018	Richard	Hines	General	8/24/2018	Phyllis	Hong	General
8/17/18	Carole	Hinton		8/20/18	Vernon	Honsinger	

8/28/2018	Sarah	Hoover	General	8/20/18	Bill	Hudson	
8/16/2018	Arthur	Hopkins	General	9/7/2018	Richad	Hudson	General
8/24/2018	Diane	Hopkins	General	8/24/2018	Robert	Hughes	General
8/24/2018	Russ	Hopler	General	9/10/2018	Kara	Hughes	General
8/24/2018	George	Horey	General	8/20/18	John	Hull	
9/10/2018	Jennifer	Horn	General	9/18/2018	Sarah	Humphries	General
9/10/2018	Susan	Hornbostel	General	9/10/18	Meg	Hunter	
8/14/2018	Joseph	Horne	General	8/24/2018	Laura	Hunter	General
9/10/2018	Ken	Horne	General	8/24/2018	Adam	Hurd	General
8/20/18	Lola	Horne		8/29/2018	Charles	Hurd	General
8/24/2018	Noel	Horne	General	9/10/2018	Suzanne	Hurley	General
9/12/2018	Thomas	Horsh	General	8/25/2018	Effie	Hutchens	General
8/24/2018	Shawn	Horton	General	9/7/2018	Christina	Hutcheson	General
8/29/2018	Michelle	Horton	General	8/25/2018	David	Hutchins	General
8/22/18	Edward	Hosken		9/21/2018	Patricia	Hyde	General
8/17/2018	Robert	Hottinger	General	8/25/2018	Marie	Hyder	General
9/9/2018	Debra	Houck	General	8/28/2018	Edgar	Hyer	General
9/19/2018	Maureen	Houlihan	General	8/23/18	Nelson	Hylton	
9/7/2018	Kimberly	Hounshell	General	8/16/2018	Brad	Hypes	General
9/10/2018	Mark	Hourigan	General	8/28/2018	Brad	Hypes	General
9/19/18	Mark	Hourigan		9/11/2018	Alek	Hyra	General
8/28/2018	Nelson	Houser	General	8/24/2018	Harold	Iida	General
8/27/18	Joe	Houston		9/10/2018	Rebecca	ILOG	General
9/8/2018	William	Howard	General	8/24/2018	Takeshi	Imajo	General
8/25/2018	Linda	Howell	General	8/24/2018	Hal	Imburg	General
9/10/2018	Henry	Howell	Other	8/24/2018	Billy	Ingram	General
9/8/2018	Rose	Howell	General	9/7/2018	Peter	Irausquin	General
8/24/2018	Cynthia	Howell	General	8/28/2018	Sherri	Irving	General
9/10/2018	Linda	Howell	General	8/28/2018	Philip	Irwin	General
9/10/2018	Sandra	Howson	General	8/24/2018	Dan	Isley	General
9/11/2018	Ben	Hoyne	Technical	9/7/2018	Marie	Iverson	General
8/24/2018	Enrique	Hoyos	General	9/19/18	Harvey	Iwata	
9/4/18	Paul	Hridding		9/11/2018	Wendy	Jaccard	General
8/20/18	James	Hubbard		8/24/2018	Bernadette	Jackson	General
8/17/2018	Larry	Hubble	General	8/24/2018	Ken	Jackson	General
8/20/18	Scott	Huch		8/24/2018	Robert	Jackson	General
9/10/2018	Donald	Huck	General	9/10/2018	Jeff	Jackson	General
9/4/18	Renee	Hudgins		8/20/18	John & Lynn	Jackson	
8/29/2018	Frank	Hudgins	General	8/20/18	Dennis	Jackson	
8/16/2018	Lauren	Hudson	General	8/28/2018	Dennis	Jackson	General
8/28/2018	Kay	Hudson	General	8/20/18	Dan	Jacobs	



8/26/2018	Claire	Jacobsen	General	9/7/2018	Barbara	Johnson	General
8/24/2018	Victor	Jacome	General	9/7/2018	Christopher	Johnson	General
9/10/2018	Vanda	Jaggard	General	9/7/2018	Phillip	Johnson	General
8/24/2018	Edward	Jahn	General	9/21/2018	Deborah	Johnson	General
9/10/2018	Ulysses	James	General	8/23/2018	Sally	Johnston	General
9/4/18	Larry	James		9/10/2018	Susan	Johnston	General
8/25/2018	Christine	Jamieson	General	8/22/18	Kenneth	Johnston	
8/14/2018	Charles	Jarvis	General	8/20/18	Dover & Wanda	Johnston III	
9/4/18	Walid	Jawad		8/24/2018	Ken	Johnston	General
8/24/2018	Jeffrey	Jaxel	General	9/10/2018	Francine	Johnston	General
8/24/2018	Tonny	Jefferson	General	8/28/2018	William	Johnston	General
8/24/2018	Melissa	Jeltema	General	8/28/2018	Kathleen	Johnston	General
8/14/2018	Shirley	Jenkins	General	8/30/2018	Kenneth	Johnston	General
8/16/2018	Dan	Jenkins	General	8/10/2018	Ronald	Jones	General
8/24/2018	Randy&Reva	Jenkins	General	8/14/2018	Karen	Jones	General
8/24/2018	Shirley	Jenkins	General	8/16/2018	David	Jones	General
8/27/2018	Frances	Jenkins	General	8/16/2018	Luther	Jones	General
8/27/2018	Alan	Jepsen	General	8/21/2018	Harold	Jones	General
8/17/18	Jane	Jervis		8/24/2018	Jo Ann	Jones	General
8/29/2018	Michael	Jewth	General	8/24/2018	Linda	Jones	General
8/14/2018	Pamela	Jiranek	General	8/24/2018	Ron	Jones	General
8/24/2018	Robert and Pam	Jiranek	General	8/24/2018	Perry	Jones	General
8/28/2018	Pamela	Jiranek	General	8/24/2018	Wortley	Jones	General
8/30/2018	Pamela	Jiranek	General	9/1/2018	Kathy	Jones	General
9/10/2018	Jade	Johannesen	General	9/1/2018	Robert	Jones	General
8/25/2018	Rhonda	Johnson	General	9/7/2018	Bruce	Jones	General
9/11/2018	Cynthia	Johnson	General	9/7/2018	Eddie	Jones	General
9/11/2018	Eric	Johnson	General	9/10/2018	Nancy	Jones	General
8/16/2018	Anthony	Johnson	General	9/10/2018	Robert	Jones	General
8/16/2018	Darius	Johnson	General	8/28/2018	William	Jones	General
8/22/2018	Michele	Johnson	General	8/29/2018	Virginia	Jones	General
8/24/2018	Dorothy-Anne	Johnson	General	8/29/2018	James	Jones	General
9/7/2018	Patricia	Johnson	General	8/20/18	James	Jones	
9/10/2018	Grace	Johnson	General	8/20/18	William	Jones	
9/10/2018	Rhonda	Johnson	General	8/20/18	William	Jones	
8/28/2018	Diana	Johnson	General	9/7/18	John	Jones	
8/20/18	James	Johnson		9/17/18	Rachel	Jones	
8/20/18	Andrew	Johnson		9/4/18	Sue	Jones	
8/22/18	R.B.	Johnson		9/7/2018	Jim	Jordan	General
8/22/18	Billy	Johnson		9/9/2018	Debra	Joseph	General
8/29/18	Elizabeth	Johnson		8/29/2018	Laura	Jost	General

9/7/18	Lee	Jous		8/24/2018	Jeff	Keith	General
8/29/2018	Rosemarie Becht	Jowdy	General	8/28/2018	Douglas	Keith	General
9/12/2018	Dick	Joyce	General	8/24/2018	Severn	Kellam	General
8/23/18	Paul	Julian		9/11/2018	Katie	Keller	General
9/20/2018	Philip	Justice	General	9/1/2018	Suzanne	Keller	General
9/4/18	Swami	Jyoti		9/9/2018	Stephen	Keller	General
9/10/2018	ellen	kabat	General	9/10/2018	Mary	Keller	General
9/10/2018	Shirley	Kagan	General	9/21/2018	Suzanne	Keller	Technical
8/26/2018	Kathy	Kain	General	8/27/18	Cheryl	Keller	
9/18/2018	Beth	Kaiser	General	9/10/2018	Elizabeth	Kelley	General
9/19/18	Audrey	Kalbach		8/23/18	Michael	Kelley	
9/4/18	Rachel	Kalin		9/20/2018	Bridget	Kelley-Dearing	General
8/24/2018	Kay	Kalmano	General	9/20/2018	Bridget	Kelley-Dearing	Other
8/30/2018	Trevor	Kaminsky	General	9/20/2018	Bridget	Kelley-Dearing	Other
9/10/2018	Sinuda	Kapalczynski	General	9/20/2018	Bridget	Kelley-Dearing	Technical
8/24/2018	Marilyn	Karp	General	9/21/2018	Bridget	Kelley-Dearing	General
9/9/2018	Marilyn	Karp	Technical	9/21/2018	Bridget	Kelley-Dearing	General
9/19/18	Marilyn	Karp		9/21/2018	Bridget	Kelley-Dearing	General
8/25/2018	Ronald	Karpick	General	9/21/2018	Bridget	Kelley-Dearing	Other
9/7/2018	Karen	Karvelis	General	9/21/2018	Bridget	Kelley-Dearing	Other
8/14/2018	C	Kasey	General	9/21/2018	Bridget	Kelley-Dearing	Technical
8/30/2018	C.	Kasey	General	9/21/2018	Bridget	Kelley-Dearing	Technical
8/25/2018	Kristine	Kasmai	General	9/21/2018	Bridget	Kelley-Dearing	Technical
9/10/2018	Annette	Kastner	General	9/21/2018	Bridget	Kelley-Dearing	Technical
8/24/2018	Janet	Katyal	General	9/21/2018	Bridget	Kelley-Dearing	Technical
8/25/2018	Melissa	Katz	General	9/13/2018	Mathew	Kelly	General
8/24/18	John	Katz		8/18/2018	Donald	Kelly	General
8/30/2018	William	Kay	General	9/10/2018	Kathy	Kelly	General
9/3/2018	Benjamin	Keahan	General	8/24/2018	William	Kelly	General
9/21/2018	Mark	Keam	General	8/28/2018	Nancy	Kelly	General
8/15/2018	April	Keating	General	8/29/2018	paul	kelly	General
9/7/2018	Victor	Keatts	General	9/7/2018	Rolfe	Kemp	General
8/24/2018	Mamush	Kebede	General	8/24/2018	Caroline	Kemper	General
9/8/2018	Sarah	Keely	General	9/7/2018	Caroline	Kennedy	General
9/7/2018	Cecil	Keene	General	8/20/18	David	Kennedy	
8/17/2018	William	Keener	General	9/5/18	Jon	Kennedy	
8/24/2018	Paula	Keeney	General	8/24/2018	Margaret	Kennedy	General
8/24/2018	Kailey	Kefi	General	8/28/2018	Al	Kenneke	General
9/10/2018	Kailey	Kefi	General	8/25/2018	Ed	Kenney	General
9/7/2018	Susan	Kehoe-Sutphin	General	8/16/18	Wayne	Kenney	
8/21/2018	F	Keith	General	9/10/2018	Kim	Keppick	General

8/17/18	Lydia	Kermitsky		8/29/2018	Clifgord	Knityel	General
8/14/2018	Doris	Kerns	General	9/14/2018	Philip	Knopp	Other
8/24/2018	Tara	Kerr	General	9/4/2018	Philip	Knopp	Other
8/24/2018	Sandra	Kerr	General	8/16/2018	Peter	Knutsen	General
8/22/18	Stephen	Kessing		9/7/2018	Jo	Kobeck	General
9/10/2018	Philip	Khnopp	General	8/16/2018	John	Kobelski	General
9/13/18	Martha	Kidd		8/24/2018	Stefan	Koch	General
9/18/2018	Doris	Kidder	General	8/28/2018	Karen	Koenig	General
8/20/18	Charlotte	Kidwell		8/21/2018	Todd	Kohlbeck	General
9/19/18	Shelby	Kienzle-Pappalardo		8/16/2018	David	Kohler	General
8/20/18	Jane	Kierwich		8/17/18	David	Kohler	
9/10/2018	Sharon	Kilpatrick	General	9/7/2018	Sheila	Kokinda	General
9/7/2018	David	Kim	General	9/10/2018	Caleb	Kong	General
8/28/2018	Gene	Kimball	General	9/10/2018	Dawn	Koogle	General
8/30/2018	Julie	Kimmel	General	8/28/2018	Richard	Korn	General
8/20/18	John	Kines		8/28/2018	Mary Anne	Kornbau	General
8/16/2018	Gregory	King	General	8/20/18	Bernard	Kornegay	
8/16/2018	Ona	King	General	8/20/18	Martha	Kornegay	
8/27/2018	Michael	King	General	8/17/2018	Kaye	Kory	General
8/24/2018	Lisa	Kingsley	General	9/21/2018	Edward	Kosewicz	General
8/29/2018	richard	kintigh	General	9/16/2018	Marc	Koslen	Other
9/10/2018	Jane	Kirchner	General	8/28/2018	Derek	Kou	General
8/29/18	Kim	Kirkbride		8/19/2018	Paul	Kovalsky	General
8/24/2018	Wanda	Kirkman	General	9/10/18	Liana	Kowalzik	
9/9/2018	Peter	Kirkpatrick	General	9/10/18	Thalia	Kowalzik	
8/24/2018	Shirley	Kirwin	General	9/10/18	Ilia	Kowalzik	
8/30/2018	Kent	Kiser	General	9/10/18	Cambria	Kowalzik	
8/29/18	Christopher	Kisle		8/25/2018	Denise	Kozminsky	General
8/30/18	William	Kitchens		8/27/18	Richard	Kraines	
8/24/2018	Donna	Kittrell	General	8/29/2018	Teresa	Kramer	General
9/13/2018	Diane	Klein	General	9/10/2018	Dana	Krauskopf	General
9/20/2018	Neelamberi	Klein	General	9/11/2018	Greta	Kreider	General
8/27/2018	Angela	Kleis	General	8/24/2018	Ashley	Kreis	General
9/10/2018	Charles	Kleymeyer	General	8/25/2018	Matthew	Kremer	General
9/11/2018	Carrie	Kline	General	8/22/2018	Karen	Kreps	General
9/7/2018	Donna	Kline	General	9/11/2018	Beth	Kreydatus	General
8/24/2018	Patricia	Klinger	General	8/16/2018	Francois	Krodel	General
8/24/2018	Andrea	Knight	General	9/9/2018	Michael	Krolak	General
8/22/18	John	Knight		9/13/2018	Brenda	Kroupa	General
8/17/2018	Clifford	Knittel	General	8/27/2018	Tanya	Kruk	General
8/29/2018	Clifford	Knittel	General	9/10/2018	Vicki	Kruschwitz	General

8/16/2018	Jon	Kube	General	8/27/18	Ford	Lanterman	
8/24/2018	Kashka	Kubzdela	General	9/4/2018	Heather	Lantz	Other
9/7/2018	Wanda	Kucera-Eksteen	General	8/25/2018	Sarah	Lanzman	General
8/24/2018	David	Kuebrich	General	8/20/18	Joanne	Lapetina	
9/10/2018	David	Kuebrich	General	8/17/2018	Wendell	Laposata	General
8/28/2018	David	Kuebrich	Other	9/7/2018	Gaynelle	Laposata	General
8/25/2018	James	Kuhn	General	9/7/2018	Paul	LaPrad	General
8/24/2018	Christopher	Kunkel	General	8/16/2018	Gray	LaPrade	General
9/3/2018	Julie	Kunz	General	9/12/2018	Tamara	Larned	General
9/7/2018	Evelyn	Kurhajetz	General	9/7/2018	Renee	Larrivee	General
8/24/2018	Shawn	Kurtzman	General	9/21/2018	Susan	Larsen	Other
9/7/2018	joan	kurz	General	8/16/2018	Ronald	Larson	General
9/8/2018	Deborah	Kushner	Other	8/28/2018	Jennifer	Lasley	General
9/10/2018	Deborah	Kushner	General	9/18/2018	Dyanne	Lathan	General
8/29/2018	Deborah	Kushner	Other	8/24/2018	Robert	Latimer	General
8/30/2018	VICKI	LABARRE	General	9/21/2018	Ruby	Laury	General
9/19/18	Michael	Labat		8/20/18	Dan	Lavender	
9/20/2018	Eleanor	Labiosa	Other	8/29/2018	Dorothy	Laverdiere	General
8/25/2018	Michael	Labrecque	General	8/24/2018	Marilyn	Lavernoich	General
8/28/2018	Connie	Lacy	General	8/28/2018	Laura	LaVertu	General
9/4/18	Nicholasa	Lagie		8/16/2018	Richard	LaVigne	General
8/24/2018	Isabel	Laguzzi	General	8/28/2018	Shirley	Lavin	Other
9/10/2018	Diana	Lahey	General	9/10/2018	Lowell	Lavy	General
8/24/2018	Mark	Laiaty-Snyder	General	8/19/2018	David	Lawrence	General
8/24/18	Hedwig	Laidman		8/21/2018	Richard	Lawrence	General
8/17/18	Joseph	Lam		9/10/2018	Sanatraya	Lawrence	General
8/20/18	Philip	Lam		8/24/2018	Rhonda	Lawson	General
8/20/18	Marvin & Mary	Lam		8/24/2018	Diane	Lawson	General
8/17/2018	John	Lamb	General	8/28/2018	Sarah	Lawson	General
8/24/2018	Rick	Lambert	General	9/19/2018	Katharine	Layton	General
8/24/2018	Gary	Lamlein	General	9/10/2018	Polly	Lazaron	General
8/16/2018	Kimberly	Lamon	General	9/10/2018	David	Lazarus	General
9/7/2018	Jeanie	Lampin	General	9/9/2018	Susan	Lazerson	General
8/27/2018	Don	Lane	General	8/20/18	Helen	Leach	
8/17/18	Karen	Lane		8/28/2018	Judith	Lean	General
8/20/18	Dennis	Lane		8/25/2018	Melissa	Leatherman	General
9/7/2018	William	Lane	General	9/18/2018	Richard	Lee	General
8/28/2018	Jane	Lanham	General	8/24/2018	Ronnie	Lee	General
9/12/2018	Daniel	Lanigan	General	9/7/2018	Irene	Leech	Other
9/18/2018	William	Lankford	General	9/21/2018	Irene	Leech	Technical
8/28/2018	Emma	Lanning	General	9/10/2018	Frances	Lee-vandell	General

8/20/18	George	Lefchak		8/29/18	Monroe	Lindsey	
9/3/2018	Christine	Lefferdink	General	8/24/2018	Charlie	Lines	General
8/22/18	Greg	Leffler		8/28/2018	Michelle	Lingus	General
9/18/2018	Laura	Legere	General	8/24/2018	Gary	Linkenhoker	General
8/24/2018	Mim	Leggette	General	9/12/2018	Melissa	Linkous	General
9/7/2018	Lisa	Lehr	General	9/1/2018	Dale	Linn	General
8/21/2018	Robert	Leinberger	General	9/21/2018	Natalie	Linton	General
8/17/18	R.J.	Leiperte		8/29/18	Ed	Linz	
8/24/2018	Deborah	Lemasters	General	8/20/2018	Robert	Lipscomb	General
8/21/18	Donald	Lemish		9/18/2018	Gordon	Lipscombe	General
8/23/18	Charles	Lenhart		9/20/2018	Tara	Lipscombe	General
8/23/18	Auli	Lenhart		9/10/2018	Patrica	Lira	General
9/7/2018	CH	Leonard	General	8/24/2018	Richard	Lisi	General
9/21/2018	Alan	Lepp	General	8/15/2018	Olympia	Litos	General
8/28/2018	Suzanne	Lepple	General	9/10/2018	Edith	Livesay	General
8/23/2018	Margaret	LeReche	General	8/20/18	Holt	Livesay	
8/24/2018	Tanya	Lervik	General	8/16/2018	Barbara	Lizana	General
9/7/2018	Phil	Les	General	8/24/2018	Robin	Lloyd	General
8/24/2018	Back	Leslie	General	8/24/2018	William	Lloyd	General
8/20/18	Russell	Leslie		9/7/2018	Janet	Lloyd	General
8/28/2018	Nancy	Lester	General	9/13/2018	Colleen	Lobel	General
8/17/18	George	Lester		8/22/18	Evelyn	Locke	
8/20/18	Kenneth	Lester		8/24/2018	Christine	Lockhart	General
8/28/2018	Chris	Leva	General	9/10/2018	Sandra	Lockhart	General
8/14/2018	David	Levenstam	General	9/11/2018	Gamaliel	Lodge	General
8/24/2018	David	Levenstam	General	9/18/2018	Paul	Logan	General
9/10/2018	Cathy	Levy	General	8/25/2018	Duke	Lokka	General
9/18/2018	Carol	Lewis	General	8/28/2018	Lois	Lommel	General
8/16/2018	Melinda	Lewis	General	8/24/2018	Susan	Long	General
8/24/2018	Virginia	Lewis	General	9/10/2018	Maryann	Long	General
8/30/2018	Andrea	Lewis	General	9/12/2018	Tom	Long	General
8/30/2018	Lena	Lewis	General	8/28/2018	Jane	Longest	General
9/7/2018	Betty	Lewis	General	9/10/2018	MILDRED	LOPEZ	General
9/1/2018	Terry	Liddy	General	8/28/2018	Eileen	Lord	General
8/25/2018	Bud and Laura	Lieberman	General	8/16/2018	Annette	Losik	General
9/7/2018	Jonathan	Lihos	General	8/16/2018	Charles	Losik	General
9/18/2018	Stephen	Lillis	General	9/12/2018	Anne	Loughrey	General
8/16/2018	Iva	Limbach	General	8/16/2018	Allison	Love	General
9/6/2018	William	Limpert	Other	8/16/2018	Matthew	Love	General
9/11/2018	Jim	Lindsay	General	8/29/18	Sonja	Love	
9/10/2018	K.	Lindsey	General	8/28/2018	James	Love	General

8/24/2018	Keith	Lovegrove	General	8/24/2018	Claire	Mack	General
9/20/2018	Shane	Lovelace	Technical	9/9/2018	Toby	Mack	General
9/20/2018	Stacy	Lovelace	Technical	8/28/2018	Frank	Mack	General
9/18/2018	Martha	Loving	General	8/25/2018	Charles	MacLane	General
8/20/18	Henry	Lowcock		8/26/2018	Susan	MacLane	General
8/24/2018	Jean	Lowe	General	9/7/2018	Carolyn	Macneal	General
9/10/2018	Sarah	Lowe	General	9/11/2018	Paul	Macomber	General
8/29/2018	Connie	Lowe	General	9/19/18	David	MacPherson	
9/7/2018	George	Lowry	General	9/19/18	Dianna	MacPherson	
8/28/2018	Mike	Lowry	General	8/24/2018	John	Madaris	General
9/7/2018	Ann	Loy	General	8/16/2018	Wilson	Madison	General
8/24/2018	Creola	Loyd	General	8/28/2018	Joe	Madison	General
8/24/2018	Jacqueline	Lucas	General	9/3/2018	John	Maggi	Other
8/20/18	William	Lucas		9/7/2018	Matthew	Mahoney	General
9/12/2018	Melissa	Luce	Other	8/24/2018	Donna	Maida	General
8/28/2018	Jacki	Lucki	General	8/28/2018	Edwin	Maitland	General
8/24/2018	Russ	Ludwick	General	9/10/2018	Lynda	Majors	General
8/30/2018	Tessa	Luecke	General	8/24/2018	Joan	Makurat	General
8/25/2018	Christie	Lum	General	9/12/2018	Stephanie	Malady	General
9/12/2018	Anne	Lusby-Denham	General	9/11/2018	Elizabeth	Malbon	General
9/19/18	Leigh Ann	Luscan		8/22/18	Roy	Maline	
9/8/2018	April	Luttman	General	8/25/2018	Donna	Malvin	General
9/9/2018	Kat	Lutz	General	8/17/2018	Ajit	Mandgi	General
8/15/2018	Teresa	Luyk	General	8/24/2018	Joe	Mangrum	General
9/12/2018	Deanne	Lyerly	General	8/29/18	Karen	Mann	
8/20/18	Kenneth	Lyerly		9/7/2018	Baedra	Manning	General
8/20/18	Kenneth	Lyerly		9/12/2018	Joan	Maples	General
8/24/2018	Thomas	Lyles	General	8/17/18	Charles	Marable	
8/24/2018	Stanley	Lyles	General	9/13/2018	Sean	Maranzano	General
9/10/2018	Rosealie	Lynch	General	9/7/2018	Eric	Marhefka	General
9/3/2018	Jacqueline	Lynch	General	8/24/2018	Cara	Marinucci	General
9/10/2018	Christopher	Lyons	General	9/7/2018	Earl	Markham	General
9/21/18	Shirley	Lytle		9/7/2018	Barry	Marple	General
8/25/2018	Esther	M.	General	9/13/2018	Edmond	Marroni	General
8/20/18	Carol	Mabey		9/9/2018	Carolyn	Marsh	Other
8/28/2018	Dhiresha	MacAskill	General	9/19/2018	Jean A.	Marsh Adams	General
9/10/2018	Angus	Macdonald	General	8/28/2018	Barry	Marshall	General
8/28/2018	Megan	MacDowell	General	8/28/2018	Leah	Marshall	General
8/28/2018	Pat	Mace	General	8/28/2018	Peter	Marshall	General
8/20/18	Barbara	Mace		9/19/18	Alice	Marshall	
8/24/2018	Gina	Macias	General	9/7/2018	Pam	Marsters	General

9/14/2018	Raymond	Martin	Other	8/20/18	Mike	Mayes	
9/18/2018	Doris	Martin	General	9/18/2018	John	Mayeux	General
9/19/2018	David	Martin	General	8/24/2018	James	Mayne	General
8/13/2018	Ricky	Martin	General	8/24/2018	Dale	Mayo	General
8/16/2018	Frank	Martin	General	8/23/18	James	Mays	
8/16/2018	Gordon	Martin	General	8/24/2018	Lou	McAdory	General
8/17/2018	Brandon	Martin	General	8/24/2018	Maryjon	Mcavery	General
8/17/2018	Lilburn	Martin	General	8/25/2018	Susan	McCarthy	General
8/17/2018	Trisha	Martin	General	8/25/2018	Donna	McCarthy	General
8/27/2018	Linda	Martin	General	9/11/2018	Teresa	McCartney	General
8/17/18	Laura	Martin		8/16/2018	Dean	McClain	General
8/17/18	Stephen	Martin		8/20/2018	Grace	McClain	Technical
8/17/18	Butch	Martin		8/24/2018	Paul	Mcclanahan	General
8/24/2018	Jim	Martin	General	8/28/2018	Morgan	McComas	General
9/7/2018	Becky	Martin	General	8/24/2018	James	McConnell	General
9/10/2018	Melissa	Martin	General	9/4/2018	Charlotte	McConnell	General
8/28/2018	Rosi	Martin	General	9/10/2018	Charlotte	McConnell	General
8/16/2018	Dennis	Martire	General	9/7/2018	Christine	McCord	General
8/20/18	Dennis	Martire		8/20/18	James	McCormack	
8/24/2018	Kelly	Martz	General	8/17/18	William	McCoy	
8/24/2018	Eugene	Mash	General	8/27/2018	Lucretia	McCulley	General
9/7/2018	Barbara	Masincup	General	9/7/2018	Lisa	McCumsey	General
8/22/18	Daniel	Mason		8/20/18	Ernest	McDaniel	
9/3/2018	Nasir	Masood	General	8/24/2018	Marianne	McDermott	General
8/20/18		Massenburg		9/7/2018	Kenneth	McDermott	General
9/10/2018	Karen	Massey	General	8/12/2018	Jerry	McDonald	General
9/4/18	Bhaguan Charles	Mateo		9/7/2018	Tom	McDonald	General
9/10/2018	James	Mather	General	8/20/18	Frank	McDonald	
8/27/2018	Christine	Mathews	General	8/20/18	Tom	McDonald	
8/16/2018	Carol	Matsey	General	9/7/2018	Rochelle	McDonald	General
9/12/2018	Tyla	Matterson	General	8/25/2018	Elizabeth	McDonough	General
9/5/2018	Jennifer	Matthews	Other	8/28/2018	Sean	McElgunn	General
8/20/18	Benjamin	Matthews		8/24/2018	Sue	McFadden	General
9/7/2018	Michele	Mattioli	General	8/28/2018	Thomas	McFadden	General
8/24/2018	Kristen	Mattioni	General	8/24/2018	Mary Ann	Mcfarland	General
8/23/18	N.G.	Maune		9/20/2018	William	McGeary	General
9/10/2018	Alexa	Mavroidis	General	8/24/2018	Deborah	McGee	General
8/22/2018	Samuel	Maxwell	General	9/10/18	Rylin	Mcgee	
8/27/2018	Travis	Maxwell	General	8/28/2018	Nancy	McGehee	General
9/7/2018	Eric	May	General	8/24/2018	Joseph	Mcglone	General
8/24/2018	Jim	May	General	9/10/2018	Christina	McGrath	General

9/11/2018	Erin	McGrath	General	9/10/2018	Erika	Meitner	General
9/10/2018	P.D.	McGraw	General	8/20/2018	Paul	Meko	General
9/21/2018	Bridget	McGregor	General	8/20/18	Patricia	Melanie	
9/12/2018	Linda	McGrew	General	9/8/2018	Kim	Melcher	General
8/20/2018	Sharon	McGuire	General	8/29/2018	Perri	Meldon	General
8/24/2018	Terry	McGuire	General	9/10/2018	Lynn	Melton	General
9/11/2018	Theresa	Mcguire	General	8/22/18	Doris	Melvin	
8/24/2018	Susan	McHenry	General	8/24/2018	Salvadore	Mendez	General
9/12/2018	Susan	McHenry	General	8/18/2018	Hector	Mendoza	General
8/25/2018	Joan	McIntyre	General	9/11/2018	Elizabeth	Meni	General
8/17/2018	Harry	McIvor	General	9/12/2018	Karen	Menichelli	General
8/16/2018	Bruce	McKay	General	8/18/2018	Dennis	Merchant	General
8/25/2018	Louise	McKee	General	9/7/2018	Stephen	Merkli	General
9/20/18	Jane	McKeel		8/29/2018	Rachel	Merriman-Goldring	General
8/25/2018	Anne	McKeithen	General	9/18/2018	Lola	Messall	General
8/28/2018	David	McKelvey	General	9/12/2018	Kym	Messer	General
9/7/18	Roland	Mckenney		9/10/2018	Dave	Messersmith	General
8/25/2018	Doris	McKnew	General	8/24/2018	John	Metcalf	General
8/24/2018	Kathleen	Mclane	General	8/14/2018	Carol	Metzger	General
8/24/2018	Richard	McLane	General	8/24/2018	Melanie	Meyer	General
8/24/18	Kenneth	McLavin		8/26/2018	Linda	Meyer	General
9/10/2018	Katherine	McLeod	General	9/7/2018	Thomas	Meyer	General
9/17/18	Anne	McMormick		8/28/2018	Dale	Meyer	General
9/8/2018	Margaret	McMullen	Other	9/10/2018	Donald	Meyers	General
8/31/2018	Bonnie	McNeely	General	9/11/2018	Lillian	Mezey	General
8/16/2018	Michael	McNichol	General	9/10/2018	Dorothy	Michalek	General
9/4/2018	David	McNiff	General	8/28/2018	Sandra	Middour	General
9/11/2018	Susan	McSwain	General	9/10/2018	shirley	Midyette	General
8/24/2018	Alexandra	McVicker	General	8/29/2018	Douglas	Milby	General
8/28/2018	Lisa	McWhorter	General	9/10/2018	Amanda	Mileur	General
8/28/2018	Ladelle	McWhorter	General	8/24/2018	Louis	Millaci	General
8/24/2018	Rita	Meade	General	8/26/2018	Susanna	Miller	General
8/24/2018	William	Meadows	General	8/16/2018	Andrea	Miller	General
9/9/2018	Jennifer	Meadows	General	8/24/2018	Andrea	Miller	General
9/19/18	Chris	Meaker		8/24/2018	Carol	Miller	General
8/28/2018	George	Mears	General	8/24/2018	John	Miller	General
8/24/2018	Sam	Measell	General	9/7/2018	Madeleine	Miller	General
9/10/2018	Melissa	Meece	General	9/10/2018	Kevin	Miller	General
8/27/2018	Elizabeth	Mehok	General	9/10/2018	Hermineh	Miller	General
8/24/2018	Milan	Mehta	General	9/10/2018	Lucile	Miller	General
8/24/2018	Douglas	Meikle	General	9/11/2018	Brad	Miller	General



8/26/2018	Susan	Miller	General	9/10/2018	John	Moon	General
8/28/2018	Nicole	Miller	Other	8/24/2018	Donald	Moore	General
9/20/2018	Floyd	Miller	General	8/15/2018	Davey	Moore	General
8/17/18	William	Miller		8/16/2018	LeAnn	Moore	General
8/21/18	Joseph	Miller		8/21/2018	Lowell	Moore	General
8/21/18	Nancy	Miller		9/9/2018	Walter	Moore	General
8/27/18	Joyce	Miller		9/10/2018	Walter	Moore	General
8/27/18	Bruce	Miller		9/11/2018	Sandra	Moore	General
8/24/2018	Charles	Miller	General	8/28/2018	April	Moore	General
9/6/2018	Ann	Miller	General	8/29/2018	Barbara	Moore	General
9/7/2018	David	Miller	General	9/7/18	Kenneth	Moore	
9/7/2018	Thomas	Miller	General	9/7/2018	James	Moore	General
8/28/2018	Stacy	Miller	General	9/12/18	James	Morano	
8/29/2018	Cathy	Miller	General	8/24/2018	Darleen	Moranobrown	General
8/29/2018	Mary	Millnr	General	8/24/2018	Melani	Moreno	General
8/24/2018	Jennifer	Mills	General	8/16/2018	John	Morgan	General
8/24/2018	Jerry	Mills	General	9/7/2018	Robin	Morgan	General
8/28/2018	Elaine	Mills	General	8/24/2018	Christine	Morgan	General
8/29/2018	Troy	Mills	General	8/17/18	Sue	Morgan	
9/7/2018	Johnneen	Minaker	General	8/20/18	Thomas	Morgan	
8/24/2018	Elaine	Minier	General	8/20/18	John	Morgan	
8/20/2018	Alfred	Mistr	General	9/7/2018	Miles	Morin	General
8/25/2018	Roy	Mitchell	General	8/12/2018	Debra	Morris	General
9/8/2018	Christopher	Mitchell	General	8/24/2018	Rocky	Morris	General
8/20/18	Robert	Mitchell		8/24/2018	Theresa	Morris	General
9/7/2018	Shooter	Mmcf	General	9/7/2018	James	Morris	General
8/24/2018	Henry	Mobley	General	9/10/2018	Suzanne	Morris	General
8/17/2018	Jeffrey	Mock	General	9/7/18	Harry	Morris	
8/29/2018	Jeff	Mock	General	9/24/18	Denny	Morris	
8/24/2018	Kelley	Modlin	General	9/7/2018	Nelwyn	Morris	General
8/24/2018	Osama	Mohamed	General	9/8/2018	Carolyn	Morrison	General
8/20/2018	Gabriele	Moison	General	8/29/2018	Lew	Morrison	General
9/10/18	Clay	Moldenhauer		8/28/2018	Marc	Morrison	General
9/2/2018	Janet	Moncure	General	9/21/2018	A.W.	Morriss	Other
8/24/2018	Chris	Monfalcone	General	9/18/2018	Coline	Morse	General
8/28/2018	Susan	Moniot	General	9/7/2018	Angela	Morton-Daniels	General
8/24/2018	Milton	Monteau	General	8/21/2018	C	Moschopoulos	General
8/28/2018	Terry	Moody	General	9/10/2018	Charity	Moschopoulos	General
8/23/18	W.B.	Moomau		8/24/2018	Isaiah	Moses	General
8/24/18	Ralph	Moomau		8/17/2018	Jeffrey	Mosher	General
9/10/2018	Giles	Moon	General	9/10/2018	valerie	Moss	General

8/30/2018	Helen	Moulis	General	8/22/18	Christine	Napier	
9/25/18	Dave	Moyer		8/24/2018	Shirley	Napps	General
8/24/2018	Rosemary	Moyers	General	8/28/2018	Mary-Jane	Nase	General
8/26/2018	David	Muae	General	8/29/2018	Bradley	Nash	General
8/28/2018	Nina	Muddiman	General	9/7/2018	Barbara	Neal	General
9/21/2018	Jon	Mueller	Technical	9/7/2018	Tracey	Neal	General
8/25/2018	Carol	Muir	General	9/10/2018	GEORGE	NEALL	Other
8/24/2018	Pamela	Muir	General	8/20/18	Carroll	Neblett	
9/18/2018	Pam	Mulcahy	General	8/24/2018	Rajiv	Neela	General
8/17/2018	Pam	Mulcahy	General	8/25/2018	Lori	Nelson	General
9/11/2018	Olga	Mulcahy	General	8/12/2018	Larry	Nelson	General
8/24/2018	Jl	Mulligan	General	8/24/2018	Carl	Nelson	General
8/26/2018	Pamela	Mullins	General	9/10/2018	Amy	Nelson	General
8/16/2018	Beth	Mulvihill	General	8/29/18	Amy	Nelson	
9/7/2018	Betty	Mulvihill	General	8/24/18	Janet	Nemish	
8/24/2018	Judith	Munson	General	9/4/18	Carol	Neuman	
8/25/2018	Martha	Murphy	General	9/9/2018	Keith	Nevison	General
8/17/18	Joseph	Murphy		8/20/18	Benjamin	Newberry	
8/20/18	Larry	Murphy		9/10/2018	Taffi	Newhouser	General
9/10/18	Leo	Murphy		8/20/18	Dean	Newman	
8/24/2018	Bob	Murphy	General	9/7/18	John	Newman	
8/24/2018	Clare	Murphy	General	9/7/18	Robin	Newman	
9/18/2018	Ann	Murray	Technical	9/10/2018	Lindsay	Newsome	General
8/16/2018	Rick	Murray	General	9/10/2018	Kamili-Busara	Newsome	General
8/24/2018	Barbara	Murray	General	8/24/2018	Chase	Newton	General
8/30/2018	Cynthia	Murray	General	9/11/2018	Christina	Newton	Other
9/11/2018	Becky	Murray-Schneider	General	8/16/2018	Vuong	Nguyen	General
8/20/18	Cary	Murrell		8/20/18	Richard	Nicely	
8/24/2018	Barbara	Musick	General	8/24/2018	Richard	Nicely	General
8/24/2018	Terry	Musselman	General	8/29/2018	Leslee	Nicholas	General
8/16/2018	Patsi	Myers	General	9/7/2018	Richard	Nicholas	General
8/24/2018	Lisa	Myers	General	8/20/18	Richard	Nicholas	
8/31/2018	David	Myers	General	8/28/2018	Mark	Nichols	General
8/20/18	Edward	Myers		8/16/2018	Michelle	Nickell	General
8/22/18	Patricia	Myers		8/29/2018	Michelle	Nickell	General
8/28/18	Donna	Myers		9/11/2018	Anne	Nielsen	General
9/21/2018	Patricia	Myers	General	9/4/18	Jerry	Nini	
8/28/2018	Robert	Nadeau	General	8/18/2018	Edward	Nkansah	General
9/4/18	Kenneth	Nadle		8/24/2018	Stanley	Nodland	General
9/4/18	Maria	Nadle		9/21/2018	Anthony	Noerpel	General
9/17/18	Justin	Nagle		9/5/2018	Wayne	Nolde	General

8/20/2018	Angela	Nolen	General	8/24/2018	Ann	Olson	General
9/13/2018	James	Nordlund	General	8/28/2018	Larry	Olson	General
9/5/2018	Forrest	Norman	General	9/21/2018	Douglas	Olson	Other
9/20/18	William	Northen		8/20/18	Martin	Olson	
8/24/2018	Marjorie	Northrup	General	8/17/18	Kathryn	Olyha	
9/18/2018	Deborah	Norton	General	8/20/18	Patricia	O'Meara	
9/7/18	Edward	Norton		8/29/2018	Patrick	O'Meara	General
9/7/18	Vera	Norton		8/24/2018	Terry	O'Neal	General
8/31/2018	Michael	Notestein	General	8/31/2018	May	Oo-Muuse	General
8/20/18	Michael	Novitski		9/20/2018	Kimberly	Ooten	General
9/8/2018	Sharliena	Novogradac	General	9/7/2018	Mary	O'Prandy	General
9/9/2018	Elizabeth	Nowakoski	General	8/27/18	Loren	Orange	
9/10/2018	Raymond	Nuesch	General	8/17/18	Nelson	Oriver	
8/20/18	Francis	Nugent		9/8/2018	Lisa	Orlando	General
8/28/2018	Barbara	Null	General	9/18/2018	Susan	Osborne	General
8/24/2018	Daniel	Nulty	General	9/7/2018	Stephanie	Osborne	General
8/30/2018	Michael	Nunley	General	8/14/2018	Roberta	Oster	General
9/6/2018	Richard	Nygaard	General	8/16/2018	Roberta	Oster	General
8/20/18	Edna	Oakes		9/18/2018	Shelley	Ottenbrite	General
9/10/2018	Linda	Oakey	General	8/25/2018	William	Owen	General
9/2/2018	Charlene	Oba	General	9/9/2018	Kelly	Owen	General
9/9/2018	Chad	Oba	Technical	9/10/2018	Martha	Owen	General
9/21/2018	Charlene	Oba	General	8/24/2018	Martha	Owen	General
8/20/2018	Basir	Obaidi	General	8/20/18	James	Owen	
8/27/18	W.J.	Obrien		8/28/2018	David	Owen	General
8/28/2018	William	O'Brien	General	8/28/2018	James	owen	General
8/17/18	George	Oconnell		9/4/2018	Michael	Owens	General
9/4/18	George	Oconnell		9/5/2018	Richard	Owens	Other
9/19/18	Jessica	O'Connell		9/12/2018	Dogan	Ozkan	General
8/11/2018	Terence	O'Dowd	General	9/10/2018	Steve	padgett	General
8/28/2018	Geoffrey	Ogden	General	9/10/18	Paula	Paenille	
8/24/2018	Joshua	Ogle	General	8/31/2018	Lynette	Page	General
9/4/2018	Lynne	Oglesby	Other	8/25/2018	Gina	Paige	General
8/24/2018	James	Ohanlon	General	8/14/2018	Gina	Paige	General
9/7/2018	Ernest	Ohito	General	8/21/2018	Gina	Paige	General
9/12/2018	GEORGE	Ohrstrom II	General	8/22/2018	Francis	Painter	General
9/20/18	Dorothy	Oilver		9/10/2018	Jan	Painter	General
9/18/2018	Carla	Okouchi	General	8/24/2018	Gavin	Painter	General
8/16/2018	Mansour	Olapour	General	9/19/2018	Vince	Paixao	General
8/24/2018	Victoria	Old	General	8/27/2018	Tami	Palacky	General
9/18/2018	Jeanne	Olson	General	9/6/2018	Ryan K.	Palazzo	General

8/24/2018	Steven	Palmer	General	8/20/18	Linda	Payne	
8/24/2018	Michael	Palmer	General	9/1/2018	Linda	Payne	General
8/24/2018	Michael	Pan	General	8/27/18	Bruce	Payton	
8/31/2018	Thomas	Pander	General	9/11/2018	Shavon	Peacock	General
8/24/2018	Brenda	Parada	General	8/17/2018	John	Peak	General
9/9/2018	Julia	Park	General	8/29/2018	John	Peak	General
9/11/2018	Sallie	Park	General	9/10/2018	Miles	Pearce	General
8/19/2018	Sydney	Parker	General	8/25/2018	William	Pearl	General
9/10/2018	Casey	Parker	General	8/27/18	Louis	Pearson	
9/21/2018	Larry	Parker	General	8/24/2018	Dorothy	Pech	General
9/21/2018	Holly	Parker	General	8/30/2018	Sidney	Pecht	General
9/4/18	Zachary	Parker		9/19/2018	Kristin	Peckman	General
8/24/2018	Cynthia	Parker	General	9/9/2018	Kristin	Peckman	General
9/7/2018	James	Parks	General	8/24/18	Barbara	Pedersen	
8/30/2018	Mark	Parks	General	8/20/18	Patricia	Pedich	
8/24/2018	Annie	Parr	General	8/28/2018	Pia	Pell	General
8/24/2018	Edyth	Parraga	General	8/28/2018	Christophe	Perini	General
8/29/2018	Fred	Parry	General	9/7/2018	Andrew	Perkins	General
8/24/2018	Mark	Parsell	General	9/20/2018	Mysia	Perry	General
9/11/2018	Lynne	Parson	General	8/15/2018	Linda	Perry	General
8/28/2018	Dave	Parsons	General	8/16/2018	David	Peters	General
8/30/2018	Edward	Parsons	General	8/29/2018	David	Peters	General
9/7/2018	Dieann	Partlow	General	8/24/2018	Jacquelyn	Petersen	General
8/25/2018	Debbie	Parvin	General	9/7/2018	Mark	Petersen	General
8/24/2018	Rajesh	Patel	General	9/10/2018	Carrington	Petras	General
8/29/2018	Simone	paterson	General	8/25/2018	Pat	Petro	General
8/24/2018	Sudhanshu	Pathak	General	9/13/2018	Molsie	Petty	General
9/10/2018	Ken	Patrick	General	8/28/2018	Molly	Petty	General
8/24/2018	David	Patrick	General	8/16/2018	Bobby	Peyer	General
9/7/2018	Judi	Patronagio	General	8/29/2018	Bob	Peyer	General
8/16/2018	Jay	Patterson	General	8/30/2018	George.	Pharo	General
8/24/18	Linda	Patterson		9/11/2018	Ginger	Phelps	General
9/14/2018	Mark	Paul	General	8/24/2018	Jim and Carol	Phemister	General
8/26/2018	Alana	Paul	General	8/29/2018	Matthew	Phillipo	General
9/10/2018	Otis	Pauley	General	8/24/2018	Judith	Phillips	General
9/10/2018	Judith	Paulos	General	8/24/2018	George	Phillips	General
9/18/2018	Rebekah	Paulson	General	9/10/2018	Trudy	Phillips	General
9/10/2018	Gwen	Paulson	General	8/24/2018	Thomas	Phipps	General
8/25/2018	Mary	Paxton	General	8/27/18	Elvin	Picano	
9/10/2018	Carter	Paxton	General	8/24/2018	fred	pickering	General
9/11/2018	Nadja	Payne	General	9/16/2018	Douglas	Pickrel	General

8/17/2018	Tammy	Pickurel	General	9/12/2018	David	Post	General
8/28/2018	Natalie	Pien	General	8/21/2018	Janice	Potter	General
9/19/18	Natalie	Pien		8/24/2018	Krista	Powell	General
9/24/18	Natalie	Pien		8/29/2018	Michelle	Powell	General
8/20/18	Charles	Pierce		8/17/18	Willard	Powell	
9/7/2018	Jonathan	Pilkerton	General	8/24/2018	Vernon	Prade	General
9/7/2018	Renee	Pillor	General	9/9/2018	David	Pratt	General
10/9/18	Alicia	Pillow		9/7/2018	Nick	Presley	General
8/28/2018	Alba	Pillwein	General	8/17/18	Richard	Prettyman	
8/24/2018	Terri	Pinheiro	General			Price	
8/19/2018	Luis	Pinto	General	8/24/2018	Steve	(125867182@p2a.co)	General
8/24/2018	Lucho	Pinto	General	8/24/2018	Madye	Price	General
8/24/2018	Fuck	pipeline	General	8/24/2018	William	Price	General
9/4/18	Mary	Pipitone		9/10/2018	Steven	Prichard	General
8/25/2018	Elizabeth	Pirsch	General	9/2/2018	Alejandro	Prince	General
8/24/2018	Tony	Piselli	General	8/26/2018	Noelle	Prince Shear	General
8/24/2018	Gregory	Piskorski	General	8/26/2018	Tim	Pritchard	General
8/24/2018	Benjamin	Pitt	General	9/4/18	Swami	Priyaananda	
8/28/2018	Donna	Pitt	General	8/17/18	Jane	Probst	
8/28/2018	Joseph	Pitt	General	8/24/2018	Mary Jo	Provenzano	General
9/10/2018	Jaynell	Pittman-Shaw	General	9/6/2018	Caroline	Pruett	General
9/11/2018	Kelly	Place	General	8/24/2018	John	Pruett	General
9/10/2018	Steven	Plant	General	8/19/2018	C.M.	Pruitt	General
8/25/2018	Robert	Poignant, Jr.	General	8/20/18	Virginia	Pruitt	
9/11/2018	Jodi	Polissky	General	9/7/2018	Virginia	Pruitt	General
9/20/2018	Crystal	Polk	General	9/4/2018	Carol	Pruner	General
9/12/2018	Crystal	Polk	General	9/10/2018	josh	pucci	General
9/10/2018	Martha	Polkey	General	8/23/2018	Robert	Pugh	General
8/24/2018	Amanda	Polson	General	9/10/2018	Lindsay	Pugh	General
9/11/2018	Nicholas	Polys	General	9/11/2018	Molly	Pugh	General
8/29/2018	Lallon	Pond	General		Francis &		
9/12/2018	Robert	Pool	General	8/20/18	Catherine	Puhala	
9/18/2018	Horea	Popa	General	9/7/2018	Robert	Pyle	General
8/24/2018	Pamela	Popovich	General	8/24/2018	Glenn	Queen	General
8/24/2018	M	Popovich	General	8/20/18	Donald	Quesenberg	
8/24/2018	William	Portch	General	8/28/2018	Mark	Quesenberry	General
8/24/2018	Rochell	Porter	General	8/19/2018	Robert	Quesinberry	General
8/31/2018	Melody	Porter	General	8/24/2018	Bob	Quesinberry	General
8/25/2018	Katherine	Posey	General	9/12/2018	Patricia	Quinn	General
8/27/2018	Susan	Posey	General	8/28/2018	Denise	Quinto	General
8/28/2018	Sharon	Posey	General	8/20/18	Donald	Raab	

8/28/2018	James	Radabaugh	General	8/20/18	Glenn	Reichenbach	
8/28/2018	Shannon	Radabaugh	General	9/19/2018	Carolyn	Reilly	General
8/24/18	Neva	Radcliff		8/14/2018	Michael	Reilly	General
9/11/2018	Kathleen	Ragan	General	8/24/2018	Jack	Reilly	General
9/10/2018	John	Ragosta	General	8/30/2018	Michael	Reilly	General
9/4/18	Margaret	Ralph		9/11/2018	Sally	Reinholdt	General
8/24/2018	Mike	Ramey	General	8/24/2018	Eda	Reisberg	General
9/10/2018	Alfredo	Ramirez	General	8/24/2018	Melissa	Reisland	General
9/7/2018	Rene	Ramirez	General	9/10/2018	Samuel	Ressin	General
8/27/18	Betty	Ramsey		8/28/2018	Samuel	Ressin	General
8/28/18	Dot	Ramsey		8/16/2018	Todd	Revell	General
8/24/2018	Joe	Ranalli	General	9/10/2018	Norma	Reyes	General
9/11/2018	Toni	Ranieri	General	9/21/2018	Elizabeth	Reyes	General
9/21/2018	Toni	Ranieri	Other	9/10/2018	Paul	Reynolds	General
8/25/2018	Chad	Ransom	General	8/31/18	Janice	Reynolds	
8/30/2018	Sam	Rasoul	General	8/24/2018	Larry	Reynolds	General
8/28/2018	Kim	Rath	General	8/24/2018	Louise	Reza	General
8/27/18	Raymond	Rathmann		8/28/2018	Will	Rhem	General
8/25/2018	Bruce	Rauscher	General	9/19/18	Rebecca	Rhoads	
9/7/2018	Daniel	Raveia	General	9/8/2018	Michelle	Rhodes	General
8/24/2018	David	Rawles	General	8/20/18	Leon	Rhodes	
8/28/2018	Laura	Ray	General	8/20/18	Goerge	Rhodes	
8/25/2018	Daphne	Raz	General	8/28/2018	Joe	Rhodes	General
8/17/18	Tom	Reamsnyder		9/10/2018	Melissa	Rich	General
8/28/2018	Scott	Reamy	General	8/16/2018	Peggy	Rich	General
8/24/2018	Daniel	Reategui	General	8/28/2018	Carol	Rich	General
8/12/2018	William	Redd	General	8/16/2018	Joan	Richards	General
8/24/2018	Danny	Redd	General	9/10/2018	Bill	Richards	General
9/4/18	Sue	Redman		8/24/2018	Margaret	Richardson	General
8/29/2018	Sue	Redman	General	9/9/2018	Judith	Richardson	General
8/28/18	Andi	Redmond		9/21/2018	Rebecca	Richardson	General
8/20/18	William	Redwine		8/24/2018	Donnie	Richardson	General
9/10/2018	Darien	Reece	General	8/29/2018	Robert	Richardson	General
8/24/2018	James	Reed	General	9/10/2018	Susan	Richmond	General
9/10/2018	Randy	Reed	General	8/24/2018	Nancy	Richmond	General
8/29/2018	karen	reed	General	8/28/2018	Susan	Richmond	General
8/16/2018	Kristen	Reese	General	8/28/2018	Elizabeth	Richter	General
8/24/2018	Sarah	Reese	General	9/12/2018	Laura	Ricketts	General
8/30/2018	Walt	reeves	General	8/28/2018	Alex	Ricks	General
8/24/2018	Cathy	Regan	General	9/10/2018	Robert	Riddle	General
9/17/2018	Katherine	Rehak	General	8/20/18	Linda	Ridley	

9/6/2018	Christiane	Riederer	General	8/24/2018	Antonio	Rodriguez	General
8/24/2018	Dianna	Riggsa	General	9/7/2018	Alejandro	Rodriguez	General
9/11/2018	Dorothy	Rilee	General	9/10/2018	Jacqueline	Rodriguez	General
8/27/2018	Norma	Riley	General	9/21/2018	Alberto	Rodriguez	General
8/20/18	Edward	Rinaca		9/10/2018	Cheryl	Roesel	General
9/8/2018	Erika	Riordan	General	8/24/2018	William	Rogers	General
8/22/2018	Jorge	Rios-Torres	General	9/9/2018	David	Rogers	General
9/10/2018	Eleanor	Ripton	General	8/24/2018	Jackie	Rogers	General
9/6/18	Earl	Ritchie		9/7/2018	Mark	Rogers	General
8/24/2018	Pete	Ritenour	General	9/7/2018	Kirk	Rohle	General
8/24/2018	Bill	Ritter	General	9/10/2018	Diane	Rohn	General
8/17/18	Edward	Rivas		9/7/2018	John	Rokisky	General
8/20/18	Bernard	Rixey		8/26/2018	Oma	Rollins	General
8/27/18	T.M.	Roan		8/28/2018	Thomas	Rooney	General
8/24/2018	Kurland	Roark	General	8/16/2018	David	Roop	General
9/12/2018	Ed	Roarty	General	8/29/2018	David	Roop	General
9/21/2018	Mara	Robbins	General	8/24/2018	Larry	Roos	General
8/21/2018	Michele	Roberts	General	8/25/2018	Jay	Rose	General
9/9/2018	Ruth	Roberts	General	9/11/2018	Mary	Rose	General
9/12/2018	Michele	Roberts	General	8/16/18	Warren	Rose	
8/20/18	Harold	Roberts		8/27/18	Gene	Rose	
8/30/18	William	Roberts		9/12/18	Ella	Rose	
8/24/2018	Michele	Roberts	General	9/7/2018	Mike	Rose	General
8/28/2018	David	Roberts	General	8/24/2018	Peter	Ross	General
8/29/2018	Dennis	Roberts	General	8/31/2018	Carolyn	Ross	General
9/19/2018	Judy	Robertson	General	9/10/2018	Chad	Ross	General
8/24/2018	Brian	Robertson	General	9/10/2018	Lilli	Ross	General
8/25/2018	Sean	Robertson	General	8/25/2018	Shannon	Roth	General
9/7/2018	William	Robertson	General	8/29/2018	Shannon	Roth	General
8/24/2018	Bill	Robey	General	8/28/18	Orvan	Rothgeb	
9/7/2018	Sharon	Robinette	General	8/24/2018	Donnie	Roudabush	General
8/29/2018	Dorothy	Robinette	General	9/10/2018	Joan	Rough	General
8/10/2018	Lee	Robinson	General	8/24/2018	Terry	Rouhier	General
8/16/2018	Neil	Robinson	General	8/22/18	Frank	Rountree	
8/24/2018	James	Robinson	General	8/24/2018	Leslie	Rouse	General
9/7/2018	Alana	Robinson	General	9/10/2018	Joyce	Rouse	General
8/29/2018	Neil	Robinson	General	8/29/2018	Wendy	Rowden	General
9/20/2018	Tina	Rockett	Other	9/9/2018	Timothy	Rowe	General
9/10/2018	Sara	Roderer	General	8/24/2018	Patricia	Rowell	General
9/7/2018	Henry	Rodes	General	8/29/2018	Dawn	Roww	General
9/4/18	Ray	Rodriguez		9/10/2018	Leslie	Rubio	General

8/16/2018	Robert	Ruble	General	9/5/2018	Ned	Savage	General
8/16/2018	Petsy	Rudacille	General	8/29/2018	Edward	Savage	General
8/26/2018	Matt	Rudawsky	General	8/24/2018	David	Savige	General
8/30/2018	Maryann	Rudy	General	9/10/2018	David	Savige	General
8/27/18	Frank	Ruff		8/20/18	Byrd	Saville Jr.	
9/10/2018	Wanda	Ruffin	General	8/29/2018	Mark	Sawin	General
9/11/2018	Katy	Rugg	General	9/8/2018	Christopher	Sawyer	General
9/9/2018	Donna	Runyon	General	9/21/2018	Chris	Saxman	General
8/24/2018	Sue	Russ	General	8/24/2018	Phyllis	Sayers	General
8/24/2018	Jack	Russell	General	9/12/2018	Peter	Sayre	General
8/24/2018	Richard	Rutherford	General	9/11/2018	Susan	Scerbo	General
8/24/2018	Mark	Rutkowski	General	9/4/18	Frank	Schawaller	
8/20/18	Brenda	Ryan		9/10/18	Sophie	Schectman	
8/20/18	William	Ryan		9/7/18	Michael	Schember	
8/28/2018	Kim	Rye	General	9/7/18	Sarah	Schenler	
8/24/2018	Deborah	Rylander	General	8/27/2018	Brandon	Schepp	General
9/10/2018	saadia	Saadni	General	9/11/2018	John	Schickler	General
9/10/18	Maribel	Sabina		8/17/2018	Joanne	Schihl	General
8/16/2018	Tami	Sachs	General	9/20/2018	Aida	Schimmel	General
8/29/2018	Tami	Sachs	General	8/24/2018	Judith	Schmidt	General
9/4/18	Gerald	Sackett		8/25/2018	Frank	Schmidt	General
8/28/2018	Afshin	Sadeghi	General	8/27/2018	Tim	Schmitt	General
8/29/2018	Lawrence	Saffioti	General	8/17/18	Warren	Schnabel	
9/7/2018	Jeff	Sailor	General	8/25/2018	Linda	Schneider	General
8/22/18	Richard	Salecker		9/19/2018	Ann	Schoenachet	General
9/9/2018	Lauren	Salinas	General	8/24/2018	Lisa	Schoener	General
8/29/2018	Anna	Salmon	General	8/24/2018	John	Schofill, Jr.	General
8/28/2018	Donald	Salyer	General	8/24/2018	Ben	Schooler	General
8/16/2018	Len	Sandberg	General	8/24/2018	Susan	Schorin	General
9/9/2018	Rachel	Sanders	General	8/28/18	Annette	Schott	
9/10/2018	Judith	Sanders	General	8/10/2018	Jeff	Schrade	General
9/12/2018	Lenette	Sanders	General	9/4/18	Heather	Schreiber	
8/24/18	Judy	Sanderson		8/20/18	Madeline	Schueler	
8/17/18	Deane	Sandridge		9/13/2018	Jim	Schulman	General
9/4/18	Margaret	Sandridge		9/20/2018	Elizabeth	Schultz	General
8/24/2018	Mei Mei	Sanford	General	8/24/2018	Beverly	Schultz	General
8/24/2018	Eric	Sanson	General	9/10/2018	Jennifer	Schutt	General
9/7/2018	Hollie	Satterfield	General	8/23/18	Jack	Schwab	
9/9/2018	Emily	Satterwhite	General	9/10/2018	Sheryl	Schweitzer	General
8/24/2018	Kelly	Saunders	General	9/12/2018	Erika	Schwendeman	General
8/29/2018	Bonnie	Saunders	General	8/31/2018	Camilla	Schwoebel	General



8/25/2018	Carl	Sciortino	General	8/20/2018	Floyd	Shaw	General
8/24/2018	Leon	Scott	General	8/24/2018	Dusty	Shaw	General
8/12/2018	Marjorie	Scott	General	9/11/2018	Monica	Shaw	Other
8/24/2018	Jo	Scott	General	8/28/2018	Nathan	Shaw	General
8/24/2018	Linda	Scott	General	8/25/2018	Mary Anne	Shea	General
9/7/2018	Roger	Scott	General	8/24/2018	Ross	Shearer	General
8/20/18	Paul	Scott		9/7/2018	Austin	Sheek	General
9/4/18	Gray	Scott		8/27/2018	Elizabeth	Sheets	General
8/24/2018	Marjorie	Scott	General	8/28/2018	Deborah	Sheetz	General
8/23/2018	Michael	Scruggs	General	8/16/2018	Andrea	Sheffield	General
9/12/2018	Mary	Scurlock	General	8/28/2018	Charles	Shelton	General
8/24/2018	Barbara	Seaman	General	8/17/18	Lawson	Shelton	
8/16/2018	Gregory	Searcy	General	9/7/2018	Lawson	Shelton	General
9/11/2018	Richard	Sears	General	9/6/18	Thomas	Shepardson	
8/16/2018	MD	Seaton	General	9/10/2018	Elizabeth	Sherer	General
9/7/2018	Anne	Seaton	General	9/9/2018	Ashley	Shew-Heflin	General
8/29/2018	Scott	Seaton	General	8/23/18	Charles	Shiflett	
8/29/2018	Scott	Seaton	General	8/20/18	Alton	Shipe	
8/20/18	Michael	Seawell		8/14/2018	Robert	Shippee	General
8/20/18	Earl	Seay Jr.		8/31/2018	Robert	Shippee	General
8/28/2018	Gail	Sedel	General	8/16/2018	Beatrice	Shirley	General
9/11/2018	Jenny	Seitz	General	8/24/2018	Beatrice	Shirley	General
8/22/18	Ed	Seitz		8/24/2018	Charlotte	Shnaider	General
9/10/2018	Kathy	Selvage	General	8/29/18	Doris	Shoat	
8/24/2018	Patrick	Setser	General	8/24/2018	Carolyn	Shortt	General
8/16/2018	Jerry	Settle	General	9/4/18	Tarden	Shovel	
8/31/2018	sandra	Settles	General	8/24/2018	Stacy	Showalter	General
9/7/2018	Sandy	Setzer	General	9/10/2018	Dan	Showers	General
9/11/2018	Francis	Sferrazza	General	8/22/18	William	Shrum	
8/29/2018	Jody	Sforza	General	9/7/18	Patrick	Shuler	
8/28/2018	Mirella	Shaban	General	8/27/18	Dennis	Shull	
9/21/2018	Queen	Shabazz	General	8/17/18	William	Shulleeta	
9/5/2018	Karen	Shaffer	Other	9/7/18	Dorothy	Shumaker	
8/29/2018	Patrick	Shagena	General	8/24/2018	John	Shumaker	General
8/24/2018	Debra	Shah	General	9/21/2018	Dianna	Sicilia	General
9/7/2018	Nicole	Shaner	General	9/21/2018	Shiva	Sicilia	Other
8/16/2018	Paul	Shanks	General	8/20/18	Guy	Siebold	
9/11/2018	Derek	Sharp	General	9/7/2018	Donetta	Sifford	General
9/10/2018	Donna	Shaunese	General	9/7/2018	Richard	Sikes	General
8/26/2018	Betsy	Shaver	General	9/10/2018	Kevin	Silas	General
8/24/2018	Danny	Shaver	General	8/28/2018	Kevin	Silas	General

8/24/2018	Corrie	Silcox	General	8/16/2018	Jeffery	Smith	General
8/24/2018	Leslie	Silkworth	General	8/24/2018	Paula	Smith	General
8/29/2018	Charles	Sill	General	8/24/2018	Steve	Smith	General
9/7/2018	Regina	Sillerud	General	8/24/2018	Neil	Smith	General
9/10/2018	Christie	Silverstein	General	9/8/2018	Betty	Smith	General
9/7/2018	Brandi	Simensen	General	9/10/2018	Michael	Smith	General
8/29/18	Jean	Simmons		9/10/2018	Rick	Smith	General
9/7/2018	Cindy	Simon	General	9/10/2018	Tamara	Smith	General
8/27/2018	H.	Simpkins	General	9/10/2018	Catherine	Smith	General
8/24/2018	Jane	Simpson	General	9/10/2018	Deirdre	Smith	General
8/24/2018	Margaret Peggy	Sims	General	9/10/2018	PAULETTE	SMITH	General
9/10/2018	Mike	Sims	General	9/10/2018	Martha	Smith	General
8/28/2018	Jessica	Sims	General	9/10/2018	Bonnie	Smith	General
8/28/2018	Mikle	Sims	General	8/23/18	Donald	Smith	
8/28/2018	George	Sindeband	General	8/24/18	Bryan	Smith	
8/24/2018	Jerald	Singer	General	8/29/18	Lenora	Smith	
8/24/2018	Greg	Singleton	General	8/29/18	L	Smith	
8/24/2018	Larkin	Sinnott	General	9/7/18	Alexander	Smith	
9/12/2018	Deniz	Sipes	General	8/24/2018	Bryan	Smith	General
9/10/2018	Meghan	Sirry	General	8/24/2018	Charles	Smith	General
8/24/2018	Jesse	Sisson	General	8/24/2018	Kristy	Smith	General
8/20/18	James	Sisson		9/2/2018	Timothy	Smith	General
9/12/2018	Shelly	Sitzer	General	9/7/2018	Murleen	Smith	General
8/31/2018	Katie	Sivinski	General	8/28/2018	James	Smith	General
8/24/2018	Stephen	Sizemore	General	8/24/2018	Ray	Smith	General
9/8/2018	Joseph	Sizemore	General	8/25/2018	Martha	Smythe	General
8/20/18	William	Sizemore		9/10/2018	Marie	Snavely	General
9/20/2018	Kate	Sjovold	General	9/7/2018	Lisa	Snead	General
9/10/2018	William	Skirbunt-Kozabo	General	8/22/18	Donald	Snipes	
9/7/2018	Linda	Skorackj	General	8/25/2018	Rosina	Snow	General
8/24/2018	Beth	Skubis	General	8/25/2018	William	Snow	General
8/22/18	Joanne	Slaughter		8/24/2018	Deborah	Snuggs	General
9/19/2018	Kay	Slaughter	General	8/20/18	Alma	Snyder	
9/21/2018	David	Sligh	Technical	9/4/18	Rebecca	Snyder	
8/28/2018	Piotr	Sliwka	General	9/9/2018	Jonathan	Sokolow	General
9/18/2018	Bradford	Slocum	General	9/21/2018	Jon	Sokolow	Other
8/11/2018	Mark	Slone	General	9/7/2018	Richard	Somazze	General
8/16/2018	William	Slusher	General	8/24/2018	Jeff	Somers	General
9/10/2018	Elizabeth	Smartt	General	9/12/2018	Jeff	Somers	General
9/18/2018	Martha	Smith	General		Christopher &		
9/20/2018	Anna	Smith	General	9/20/2018	Priscilla	Sonne	Technical

8/16/2018	Calvin	Sonner	General	8/22/2018	Kelly	Steel	General
9/20/2018	Nancy	Sorrells	Technical	8/29/2018	Beth Gamba	Steel	General
8/28/2018	Valerie	Sottile	General	8/20/18	John	Stefaniak	
9/10/2018	George	Spagna	General	9/10/2018	Christine	Steiffer	General
8/24/2018	Evelyn	Spain	General	9/4/18	Isaac	Stein	
8/23/18	Michael	Spangler		8/24/2018	Lorenz	Steininger	General
8/24/2018	John	Spangler	General	9/10/18	Cynthia	Steinkamp	
8/25/2018	Mary-Betsy	Spano	General	8/11/2018	William	Stell	General
8/24/2018	Judee	Spargur	General	8/29/2018	Tom	Stephens	General
9/6/2018	Maya	Sparks	General	8/16/2018	Van	Stephenson	General
8/24/2018	Terriena	Sparks	General	9/4/18	John	Stephenson	
8/28/2018	Cindy	Speas	General	9/10/2018	Heather	Sterling	General
9/2/2018	Louis	Spector	General	9/12/2018	Margaret	Sterling	General
8/16/2018	Jack	Speers	General	8/25/2018	Rose	Stern	General
9/7/2018	Jonathan	Spence	General	8/20/18	Richard	Stern	
8/24/2018	Samuel	Spencer	General	9/10/18	Robert	Stern	
9/21/2018	Margie	Spillen	General	8/24/2018	Joy	Sterritt	General
8/16/2018	Lora	Spiller	General	8/24/2018	Philip	Stetson	General
8/24/2018	Margaret	Spiller	General	8/27/2018	Mark	Stevens	General
8/23/18	Robert	Spilman		9/8/2018	Elizabeth	Stevens	General
8/24/2018	Bill	Sprouse	General	9/10/2018	Elizabeth	Stevens	Other
8/25/2018	Karen	Spurr	General	8/28/2018	Marian	Stevens	General
9/7/18	Shari	Squicchio		8/17/18	Sarah	Stevens	
9/10/2018	Kathryn	Squires	General	9/7/2018	Dave	Stevens	General
9/10/2018	Elizabeth	Stafford	General	8/18/2018	Jeff	Stewart	General
8/20/18	Jay	Stafford		8/24/2018	Ronald	Stewart	General
9/6/18	William	Stafford		8/22/18	Carl	Stewart	
9/19/18	William	Stafford		8/22/18	Jack	Stewart	
8/29/18	Dale	Stahl		8/22/18	Brenda	Stewart	
8/24/2018	BrendaDale	Stahl	General	8/28/2018	Elijah	Stewart	General
9/21/2018	Charmayne	Staloff	Technical	8/28/2018	Betty	Stewart	General
8/16/2018	Stephen	Stanley	General	8/29/2018	Elijah	Stewart	General
8/24/2018	Howard	Stanley	General	9/11/2018	Alia	Stewart-Silver	General
9/11/2018	Jeff	Staples	General	9/11/2018	Maya	Stewart-Silver	General
8/20/18	Wiley	Stapleton		9/3/2018	Vickie	Stike	General
8/24/2018	Richard	Stapleton	General	8/24/2018	Robin	Stimmel-Singh	General
9/10/18	Dhyani	Star		9/21/2018	Georgianne	Stinnett	General
8/24/2018	Kathy	Starr	General	8/28/2018	Mary	Stinnette	General
8/17/2018	Sheila	States	General	8/15/2018	Roxanne	Stinson	General
8/24/2018	Phyllis	Statzer	General	8/15/2018	James	Stinson	General
9/10/2018	Andrea	Steegmayer	General	9/7/2018	Ken	Stinson	General

9/7/2018	Treasure	Stith	General	9/5/2018	Matt	Summey	General
9/21/2018	Beth	Stockner	Other	8/24/2018	Suzanne	Sundburg	General
9/10/2018	Nancy	Stoepker	General	8/20/18	Reed	Sunsher	
8/20/18	Richard	Stonage		9/7/2018	Faith	Supinger	General
8/24/2018	Barbara	Stone	General	9/7/2018	Charle	Surface	General
8/25/2018	Christine	Stone	General	8/24/2018	John	Surr	General
8/24/2018	Benjamin	Stoppe	General	9/18/2018	Elizabeth	Suskind	General
9/12/2018	Sam	Storeman	General	8/24/2018	Joe	Sutphin	General
8/29/2018	Sam	Storeman	General	9/20/2018	Dory	Suttmiller	General
9/10/2018	Judy	strang	General	9/9/2018	Mary	Sutton	General
8/29/2018	Susan	Strattner	General	8/23/18	Agnes	Sutton	
8/24/2018	Annette	Straubinger	General	8/24/2018	David	Swann	General
8/20/18	W. K.	Straughen		9/7/2018	Jude	Swanson	General
9/14/18	Randall	Strawbridge		8/24/2018	Angie	Swartz	General
8/24/2018	Elizabeth	Streagle	General	8/28/2018	Kathleen	Swartz	General
8/24/2018	Michelle	Stretar	General	9/7/2018	Tony	Sweany	General
8/28/2018	Rebecca	Strode	General	8/24/2018	Carey	Swecker	General
9/10/2018	Sybille	Stromberg	General	8/16/2018	Patricia	Sweeney	General
8/27/2018	Daniel	Strong	General	8/20/18	Patricia	Sweeney	
8/25/2018	Deborah	Strzepek	General	8/29/2018	Patricia	Sweeney	General
8/22/18	Gary	Stull		9/5/2018	Jerry	Sweeten	Other
8/27/18	Allen	Stultz		8/25/2018	Bob	Swemba	General
9/8/2018	Caley	Sturgill	General	9/17/18	Laurel	Swenson	
8/17/18	Robert	Sturgill		8/24/2018	Fran	Swindall	General
9/10/2018	Donna	Stvartak	General	8/20/18	Edgar	Swoge	
8/24/18	Robert	Styer		9/19/2018	Emmallyea	Swonyoung	General
8/19/2018	Catherine	Suddarth	General	8/30/2018	Robin	Swope	General
9/4/18	Swami	Suddhananda		8/24/2018	Regina	Swygert-Smith	General
9/18/2018	Dennis	Sugumele	General	8/28/2018	Rhonda	Sykes	General
9/4/18	Swami	Sugunananda		8/24/2018	Sheila	Sylvester	General
8/20/18	William	Suhler		9/11/2018	Alison	Symons	General
8/24/2018	Gretchen	Sukow	General	8/16/2018	Gray	Sypolt	General
8/24/2018	Mary Helen	Sullivan	General	9/7/2018	Charles	Syrek	General
8/24/2018	Jennifer	Sullivan	General	8/14/2018	Alexis	Szepesy	General
9/11/2018	Mollee	Sullivan	General	8/28/2018	Walter	Szewczyk	General
8/22/18	Gloria	Sullivan		8/24/2018	Dennis	Tackett	General
8/24/2018	Maureen	Sullivan	General	8/26/2018	Carla	Takacs	General
8/28/2018	Joel	Sullivan	General	8/26/2018	Carol	Talbot	General
9/7/2018	Willie	Summers	General	8/23/18	Barbara	Talley	
9/10/2018	Becca	Summers	General	9/21/2018	Amanda	Tandy	General
8/29/2018	Jess	Summers	General	9/21/2018	Chris	Tandy	General

8/20/18	Jack & Barbara	Tapping	
8/16/2018	Geologist	Tarr	General
8/17/18	Dan	Tatar	
9/7/2018	Julie	Tate	General
8/24/2018	Donnie	Tate	General
9/24/18	Kathryn	Tatko	
8/24/2018	Haskell	Taub	General
8/24/2018	Nancy	Taubert	General
8/24/2018	Nathan	Tausch	General
9/1/2018	Emily c.	Tayh	General
8/24/2018	Charlie	Taylor	General
8/24/2018	Gary	Taylor	General
8/24/2018	Amber	Taylor	General
8/24/2018	Kathleen	Taylor	General
8/25/2018	Tanterrair	Taylor	General
9/7/2018	Kim	Taylor	General
9/10/2018	Marilee	Taylor	General
9/12/2018	Jeanette	Taylor	General
9/7/18	Willie	Taylor	
9/10/18	Marion	Taylor	
8/29/2018	James	Taylor	General
8/24/2018	Helen	Taylor	General
9/2/2018	Joyce	Taylor	General
9/7/2018	Brad	Taylor	General
8/17/18	Mitchell	Tedeschi	
8/25/2018	Wayne	Teel	General
9/10/2018	grace	Teeples	General
8/25/2018	Newton	Teichmann	General
8/21/2018	Kristine	Telford	General
8/20/18	Ted	Tempel	
8/28/2018	Susan	Temple	General
9/6/18	William	Templeton	
8/25/2018	Patricia	Terrell	General
8/24/2018	Carla	Terry	General
9/7/2018	Jean	Terry	General
8/20/18	Fredrick	Terry, Jr.	
9/10/2018	Sallie	Thalhimer	General
8/16/18	M.M.	Theobald	
8/29/18	Christopher	Thiele	
8/24/2018	Virginia	Thomas	General
8/24/2018	John	Thomas	General

8/26/2018	Ben	Thomas	General
9/8/2018	J	Thomas	General
9/6/18	Susan	Thomas	
9/18/2018	Michele	Thomas	General
8/24/2018	Larry	Thomas	General
9/12/2018	Karen	Thomas-Kovick	General
8/30/2018	SHELLY	THOMPSON	General
8/20/18	Dolly	Thompson	
9/7/2018	Ruth	Thompson	General
8/29/2018	Michael	Thompson	General
8/28/2018	William	Thomsen	General
9/4/18	Janice	Thorn	
9/6/2018	Suzanne	Thorniley	General
9/4/18	Andrea	Thornock	
9/4/18	Janette	Thornton	
9/10/18	Rick	Thuing	
9/10/18	Ell	Thuing	
9/21/2018	Vernon	Tillage	General
9/21/2018	Lamont	Tillage, Jr.	General
9/7/2018	Ronald	Tillar	General
8/24/2018	Bonni	Tillotson	General
8/24/2018	Bruce	Tinker	General
8/28/2018	Pam	Tinker	General
8/10/2018	Alice	Tipton	General
8/16/2018	Brain	Tipton	General
8/24/2018	Isabel	Tirath	General
9/12/2018	Melody	Titus	General
8/20/18	Michael	Toal	
9/10/2018	Akossiwa	Togbe	General
8/25/2018	Madeleine	Toland	General
9/20/2018	Gloria	Tolbert	General
9/10/2018	Daniel	Toliver	General
8/24/2018	Joseph	Tomei	General
8/28/2018	Sharone	Tomer	General
8/17/18	Paul	Tompkins	
9/7/2018	Emmett	Toms	General
8/24/2018	Karen	Tootelian-Westermann	General
8/26/2018	Mary-Stuart	Torbeck	General
8/24/2018	Deedee	Tostanoski	General
9/19/2018	Katie	Toth	General
8/25/2018	Mary	Totty	General

9/19/18	Timothy	Towslee		9/10/2018	Ruth	Twiggs	General
9/10/2018	Eliza	Tracy	General	8/17/18	Edward	Twohy	
8/31/18	Warren	Tracy		9/19/18	Whitney	Tymas	
8/24/2018	Mai	Tran	General	8/24/2018	Timothy	Tysor	General
9/18/2018	James	Traweek	General	9/9/2018	Jacqueline	Underwood	General
8/24/2018	Barry	Traylor	General	9/12/2018	Lucian	Undreiu	General
9/9/2018	August	Tremblay	General	9/12/2018	Kris	Unger	General
8/19/2018	Nelson	Trent	General	8/24/2018	John	Updike	General
8/25/2018	Alan	Trent	General	8/24/2018	Nancy	Urbanske	General
9/4/2018	Gina	Trent	General	8/24/2018	Sandra	Uribe	General
8/26/2018	Meg	Trepp	General	9/10/2018	Evelyn	Urquhart	General
8/22/18	Charles	Trible		9/9/2018	Kat	Utermark	General
8/29/2018	James	Trimm	General	9/7/2018	Darren	Utley	General
9/11/2018	Bruce and Penny	Triplett	General	9/4/18	Magui	Valadares	
9/8/2018	David	Tripp	General	8/27/18	Anthony	Valente	
9/8/2018	Bob & Mary	Tripp	General	9/9/2018	Matthew	Vallera	General
9/10/2018	Karen	Tripp	General	8/20/2018	James	Valliere	General
8/28/2018	Jennifer	Trippier	General	9/10/2018	Joelle	Van Over	General
8/24/2018	John	True	General	9/7/2018	Edna	Vance	General
9/21/2018	Mary	Trujillo	General	9/7/2018	Andy	Vanhoozer	General
8/24/2018	Gorden	Trutt	General	9/10/2018	Jean Marie	VanWinkle	General
9/10/2018	Carissa	Tsiris	General	8/24/2018	Brenda	Varley	General
9/10/2018	Kelly	Tsow	General	8/25/2018	Amy	Varson	General
9/14/2018	Lawrence	Tubb	General	9/21/2018	Brett	Vassey	General
8/25/2018	Frederick	Tuck	General	8/16/2018	Sam	Vaughan	General
8/25/2018	Sally	Tucker	General	9/7/2018	Teresa	Vaughan	General
9/10/2018	Betsy	Tucker	General	8/24/2018	Luis	Vazquez	General
9/11/2018	Sally	Tucker	General	8/24/2018	Tessa	Veazey	General
8/20/18	Forrest	Tucker		8/24/2018	Gady	Vega	General
8/27/18	Larry	Tucker		9/7/2018	Salvador	Velazquez	General
8/28/2018	C. W.	Tucker	General	8/24/2018	Harry	Veney	General
8/29/2018	Tirrell	Tucker	General	8/24/2018	Larissa	Venzie	General
9/26/18	Cody	Tunert		8/28/2018	Chuck	vernon	General
8/24/2018	Jean	Tunstall	General	9/7/2018	Martha	Versprille	General
8/24/2018	James	Tunstall	General	8/24/2018	Betty	Vignes	General
8/23/2018	Clarence	Tuppince	General	8/30/2018	Jorge	Villanueva	General
9/10/2018	Shana	Turner	General	8/24/2018	Hella	Viola	General
9/10/2018	Jake	Turner	General	8/24/2018	Ann	Violi	General
9/10/2018	THOMAS	TURNER	General	8/24/2018	Brea	Viragh	General
9/11/2018	Pamela	Turner	General	8/20/18	Don	Virgin	
9/4/2018	Deborah	Tussey	General	9/2/2018	David	Voss	General

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9/10/2018	Anne	W.	General	8/20/18	Jospeh	Warren	
8/24/2018	Lauren	Wade	General	9/12/18	Ada	Washington	
8/22/18	William	Wade		9/10/2018	Andrea	Wasiewski	General
9/11/2018	Robert	Wadsworth	General	8/17/18	William	Wasilewski	
8/31/2018	Ryan	Wagener	General	9/18/2018	Case	Watkins	General
9/9/2018	Joan	Wages	Other	8/17/18	James	Watkins	
9/10/2018	Joan	Wages	General	8/20/18	Steve	Watkins	
9/18/2018	ellen	Wagner	General	8/28/2018	Gordon	Watkins	General
9/4/18	Ruth	Wagner		9/21/2018	Shepelle	Watkins-White	Other
8/27/2018	Michael	Wagner-Diggs	General	8/25/2018	Pamela	Watson	General
8/20/18	Carmel & Ubaldi	Waldi		9/10/2018	Libby	Watts	General
9/7/2018	Melanie	Waleski	General	9/7/2018	Dorman	Watts	General
8/29/2018	Jeffery	Walke	General	8/16/2018	LaVerne	Waybright	General
8/29/2018	Christina	Walke	General	8/23/18	Ronald	Weade	
8/28/2018	Robert	Walker	General	8/24/2018	Tom	Weatherford	General
8/28/2018	Cody	Walker	General	8/19/2018	Robert	Webb	General
9/5/2018	Nick	Walker	General	8/20/2018	Elizabeth	Webb	General
9/9/2018	Eric	Walker	General	8/24/2018	Wayne	Webb	General
9/7/18	Warner	Walks		9/10/2018	Patricia	Webb	General
9/13/2018	Lindsey	Wallace	General	9/11/2018	Maureen	Webb	General
8/29/2018	Alfred	Wallace	General	9/11/2018	C. Flint	Webb	Technical
9/7/2018	Vance	Wallace	General	8/22/18	Ed	Webb	
9/25/18	White	Wallenborn		8/29/18	Chris	Webb	
9/10/2018	Linda	Waller	General	8/29/2018	Clinton	Webb	General
8/24/2018	Donald	Walsh	General	8/29/2018	Rosaland	Webb	General
8/25/2018	Mary Ann	Walsh	General	8/28/2018	Katherine	Weber	General
9/18/2018	Kate	Walter	General	9/19/18	Katherine	Weber	
9/21/2018	David	Walter	General	9/7/2018	William	Webster	General
8/24/2018	Linda	Walters	General	9/7/2018	Jay	Webster	General
9/10/2018	Anne	Walters	General	9/18/2018	Jane	Wechsler	General
8/20/18	Claus	Walther		8/24/2018	Sarah	Wedge	General
8/22/18	James	Wanchisn		9/19/18	Dorinda	Wegener	
9/20/2018	Louise	Ward	General	8/24/2018	Mary and Martin	Wehrle	General
8/16/2018	Erin	Ward	General	8/24/2018	Benjamin	Weiner	General
8/29/2018	Marion	Ward	General	8/24/2018	Eric	Weiner	General
8/23/18	Frank	Ward		8/16/2018	Virginia	Weis	General
8/24/2018	William	Warder	General	8/29/2018	Virginia	Weis	General
8/16/2018	Betty	Ware	General	9/21/2018	William	Weiss	General
9/11/2018	David	Warner	General	8/24/2018	William	Welkowitz	General
8/23/18	G.M.	Warnner		8/29/2018	Wendy	Wellener	General
8/26/2018	Carol	Warren	General	9/19/18	Douglas	Wellman	

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8/14/2018	Marjorie	Wells	General	9/12/2018	Niluka	Wickramaratne	General
8/30/2018	Norma	Wells	General	9/9/2018	Pat	Widener	General
8/30/2018	Susan	Weltz	General	8/24/2018	Kirk	Widmayer	General
9/7/2018	Joshua	Wenderoff	Other	9/18/2018	John	Wiggins	General
8/20/2018	Keith	Wendland	General	8/24/2018	Ruth	Wilburn	General
8/25/2018	Christy	Wente	General	8/28/2018	Greg	Wilburn	General
9/5/2018	Johanna	Wermers	General	8/16/2018	Ronald	Wilcox	General
8/20/18	Wilhelm	Werner		9/10/2018	Margie	Wildblood	General
9/3/2018	David	Wertz	General	8/28/2018	Roy	Wilensky	General
8/29/2018	Richard	Wesley	General	9/18/2018	David	Wiley	General
9/18/2018	Martha	West	General	8/24/2018	Jan	Wiley	General
8/24/2018	Terrie	West	General	8/24/2018	Debbie	Wilkerson	General
9/8/2018	Crystal	West	General	8/20/18	Charles	Wilkins	
9/10/2018	Lynda	West	General	9/7/2018	Sam	Wilkins	General
9/21/2018	Lauren	Westcott	Other	8/15/2018	Linda	Will	General
9/8/2018	Deborah	Western	General	8/24/2018	Jimmie	Will	General
8/28/2018	Allyson	Whalley	General	8/24/2018	Cyndi	Willard	General
9/7/2018	Steve	Wharton	General	9/10/2018	Martha	Willard	General
9/7/2018	Amie	Wheeler	General	9/4/2018	Crystal	Willcuts	Other
9/10/2018	Gary	Wheeler	General	9/11/2018	Ruth	Willet	General
8/20/18	Donald	Wheeler		8/11/2018	David	Williams	General
8/29/2018	Donald	Wheeler	General	8/11/2018	Jo	Williams	General
8/30/2018	Louise	Whipple	General	8/16/2018	Edward	Williams	General
8/19/2018	Michael	Whitaker	General	8/19/2018	Lee	Williams	General
8/24/2018	Gene	Whitaker	General	8/22/2018	John	Williams	General
9/10/2018	Eugene	Whitaker	General	8/24/2018	Justin	Williams	General
8/25/2018	Timothy	Whitcombe	General	8/24/2018	John	Williams	General
9/20/2018	Marsha	White	General	9/4/2018	Cyndy	Williams	Other
8/14/2018	Judson	White	General	9/5/2018	Linda	Williams	General
8/24/2018	Tonya	White	General	9/7/2018	Victoria	Williams	General
9/10/2018	David	White	General	9/9/2018	Kimberly	Williams	Other
8/30/2018	Phyllis	White	General	9/10/2018	Gera	Williams	General
8/20/18	John & Sandy	White		9/10/2018	Alek	Williams	General
8/20/18	Beatrice	White		9/11/2018	Ruth	Williams	General
9/21/2018	Gary	White	General	9/21/2018	Lee	Williams	General
8/24/2018	Gloria	Whitehurst	General	9/24/18	Jack	Williams	
8/16/2018	Charlene	Whitfield	General	9/4/18	Parker	Williams	
8/29/2018	Charlene	Whitfield	General	9/4/18	Alexandra	Williams	
8/23/18	Fred	Whitney		8/24/2018	Thomas	Williams	General
9/4/18	Norah	Whiton		8/24/2018	Marshall	Williams	General
8/25/2018	Edna	Whittier	General	9/18/2018	John	Williamson	General

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8/29/2018	Jesse	Willingham	General	9/10/2018	Vonda	Wolcott	General
9/18/2018	Kathryn	Willis	General	9/7/2018	Tracy	Wolfington	General
8/15/2018	William	Wilson	General	9/7/2018	Ronnie	Womack	General
8/16/2018	Howar	Wilson	General	8/24/2018	Vernon	Wong	General
8/18/2018	Larry	Wilson	General	9/7/2018	Mark	Wood	General
8/24/2018	Patricia	Wilson	General	8/17/18	Charles	Wood	
8/24/2018	Tim	Wilson	General	8/20/18	Robert	Wood	
9/10/2018	Rhet	Wilson	General	9/7/18	Annette	Wood	
8/20/18	Vaughn	Wilson		8/29/2018	Jeffrey	Wood	General
8/20/18	Ruth	Wilson		9/9/2018	Diana	Woodall	General
8/23/18	Nora	Wilson		9/19/18	Gray	Woodard	
9/19/18	Ernest	Wilson		8/31/2018	Ann	Woodlief	General
8/24/2018	Robert	Wilson	General	8/16/2018	Gary	Woods	General
8/28/2018	Howard	Wilson	General	8/24/2018	Daniel	Woods	General
9/7/2018	William	Wilson	General	8/29/2018	Rick	Woolard	General
9/10/2018	Sharon	Wilson	General	8/30/2018	Sandra	Woolfenden	General
9/11/2018	Conrad	Wilson	General	9/5/2018	Ruth	Woollett	General
8/28/18	Toni	Wiltshire		8/16/2018	Billy	Wooten	General
9/1/2018	John	Wimmer	General	9/11/2018	Deborah	Wooten	General
8/16/2018	Keith	Windle	General	8/20/18	Lucian	Work	
8/24/2018	Venice	Winfield	General	9/20/2018	Kacy	Workman	General
8/20/18	Price	Wingate		8/28/2018	Charles	Woznak	General
8/14/2018	Marvin	Wingfield	General	8/18/2018	Kyle	Wright	General
9/11/2018	Martha	Wingfield	General	8/26/2018	Lawrence	Wright	General
8/30/2018	Marvin	Wingfield	General	9/10/2018	Lawrence	Wright	General
8/20/18	John	Wingfield		8/27/18	Henry	Wright	
8/24/18	Henry	Wingfield		9/10/18	Wendy	Wright	
8/28/2018	Mark	Winslow	General	9/4/18	Paul	Wright	
8/29/2018	Belinda	Winstead	General	8/24/2018	Eddie	Wright	General
8/28/2018	Randy	Winston	General	8/28/2018	Elaine	Wright	General
9/18/2018	Sandra	Wisco	General	9/7/2018	Felicia	Wuest	General
8/24/2018	John	Wise	General	9/21/2018	Jeanette	Wurster	Other
8/24/2018	Ronald	Wise	General	8/23/2018	James	Wyatt	General
8/19/2018	Timothy	Wiseman	General	9/10/2018	Ann	Wyatt Heisler	General
8/25/2018	Allen	Witherington	General	8/22/18	John	Wynn	
9/10/2018	Anne	Withers	General	9/7/2018	Gary	Wyse	General
9/18/2018	Stephen	Witt	General	8/27/18	Gary	Wyse	
8/17/18	Tommy	Witten		9/20/2018	Rena	Xiao	General
8/24/2018	Thomas	Wittkamp	General	8/26/2018	Melissa	Yancy	General
9/9/2018	Sue	Wo	General	9/12/2018	Howard	Yarus	General
9/21/2018	Kate	Wofford	General	8/25/2018	Joan	Yater	General

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8/24/2018	Teresa	Yates	General
8/25/2018	Kenneth	Yates	General
8/26/2018	Richard	Yates	General
8/24/2018	Dusty	Yates	General
8/28/2018	Barry	Yeargin	General
8/26/2018	Amanda	Yoder	General
8/27/2018	Forrest	Yoder	Other
8/21/18	Roy	Yoder	
8/24/2018	Brad	Yoho	General
8/24/2018	Ronald	Yopp	General
8/20/18	Henry	York	
8/24/2018	Paul	Youmans	General
8/16/2018	Joyce	Young	General
8/21/2018	Steven	Young	General
8/25/2018	Kristina	Young	General
9/12/2018	Vincent	Young	General
8/17/18	Tom	Young	
9/18/2018	Donna	Yudkin	General
8/20/18	Carolyn	<b>Zabito</b>	
8/28/2018	Walter	Zadan	General
9/18/2018	Coleen	Zahnke	General
9/20/2018	Michel	Zajur	General
9/10/2018	Teresa	Zamalloa	General
8/30/18	Broiuslaw	Zamojda	
8/22/18	Gregory	Zaremba	
8/24/2018	Sam	Zarovy	General
9/10/2018	Sam	Zarovy	General
8/19/2018	John	Zeimer	General
8/24/2018	James	Zell	General
9/18/2018	Louis	Zeller	Technical
8/24/2018	Scott	Zellner	General
8/24/18	Theodore	Zeunges	
9/19/2018	Scott	Ziemer	General
8/24/2018	Tony	Zilleruelo	General
8/24/18	Robert	Zimmerman	
8/21/2018	Kevin	Zink	General
8/29/2018	Mindy	Zlotnick	General
9/8/2018	Mindy	Zlotnick	Technical
8/24/2018	Alexis	Zollino	General
9/7/18	Randy		

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# NRDC COMMENTERS

matthew chamberlin  
 PATRICIA WILSON  
 Shawn Firth  
 Catherine Conlan  
 Robert Shelor  
 Jeff Mann  
 Charles Shelton  
 Dorothy Michalek  
 Linda Sigmund  
 Ed Kenney  
 Kathleen Lapinski  
 Ray Nuesch  
 Robert Wallace  
 lois garrett  
 Virginia Barber  
 Maryetta Brown  
 Jordan Deafenbaugh  
 Anthony Slotwinski  
 Peter Greider  
 Jim Phemister  
 Rita McCracken  
 Karen Herrell  
 katie carter  
 Kailey Kefi  
 Kaitlin Einhaus  
 James Bennett  
 Evgenia Harrison  
 Oliver Guichard  
 Mary Wazlak  
 Ashley Izor  
 David White  
 Sarah Womack  
 Earl Smith  
 Laura Buckwald  
 Michael Brandes  
 Jean Adams  
 Daniel Strong  
 Earl Smith  
 cynthia parsons  
 William Meadows  
 Louis Landesman  
 Holly Worthington  
 Dr. Tammy King  
 Ray Nuesch

Joan Schneider  
 James Hartley  
 Jeff Somers  
 Norman Dowling  
 Maria-Celeste Delgado-  
 Librero  
 Justin Masters  
 Cheryl Reames  
 Gene Cochran  
 Jeanette Wurster  
 Melinda Bashen  
 Caitlin Archambault  
 Emerson Marks  
 Seth Young  
 Bradly Braithwaite  
 Gina Robinson  
 Rachel Taylor  
 Mary Buford Hitz  
 frank Wels  
 Sharone Tomer  
 Sarah Paca  
 John Adsit  
 Charles Owusu  
 Joseph Anthony  
 Karen Cairns  
 Joseph Leedy  
 Linda C. Dehart  
 Pam Bevins  
 Edward Savage  
 Jacki Lucki  
 Barbara Seaman  
 Angela Kleis  
 Keith Everton  
 Caryn Brown  
 Lynne Euse  
 Necole Cook  
 Ken Gigliello  
 Lynn Lineberger  
 Jay Liu  
 William Skirbunt-Kozabo  
 judi Burbes  
 Thomas Danieli  
 Bee Attkisson  
 Christine Fuss  
 Barbara Weber  
 Amy Staats

Albert DeCarlo  
 Heather Henthorne  
 Eliot Singer  
 Susan LaMontagne  
 Kenneth Lapointe  
 David Simmons  
 Ray Fowler  
 Stephanie Credno  
 Susan Park  
 Lisa Bradford  
 Angie Gomez  
 Susan Park  
 Diane Even-Tov  
 Gary Lett  
 Gary Lett  
 Joe Doerr  
 Christy Doran  
 Tamara Miller  
 Crystal Cooper  
 Kathleen Hoeck  
 Mandy Hoy  
 Rommaan Ahmad  
 Diana Franco  
 Juergen Hauber  
 Linda Crafton  
 Jennifer Midgett  
 Madeline Helbraun  
 Karen Davenport  
 Edward Jahn  
 Joe Anshien  
 michelle putze  
 Charles Key  
 Paul DiMarco  
 Christiane Riederer  
 Sally Wise  
 gary kuhn  
 Salena Levi  
 Donald Address  
 Rhea Baldino  
 Laura Ricci  
 Elisabeth Richter  
 Kimberly Fisher  
 Johnna Huxtable  
 JoAnn Agnone  
 Ilana Griffith  
 Marilyn Clark

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Joseph Gebron  
pat rollo  
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Melanie Meyer  
Vicki Kruschwitz  
Alex Sapounakis  
Maureen Cippel  
Jerald Singer  
Elaine Stoltzfus  
Jean Kristen Tunstall  
Mimi Hodsoll  
pat mace  
Marvin Westen  
Grace Kelly  
Barbara Kates  
Harriet Hirsch  
Tami Palacky  
Michaela M Oldfield  
Carol Metzger  
Beverly Bugos  
Brigitte Tawa  
Kathleen Ragan  
Douglas Gorton  
M J Staiger  
Barbara Jacoby  
Peter Egan  
Robert Rhodes  
Teresa Bradford  
Cas Overton  
Brittany Scaturro  
Steven Plant  
Richard W. Firth  
Patsy Aikey  
M Sullivan  
Melody titus  
Nancy Brown  
Nancy Jones  
Mary Totty  
Wava Osborne  
Bonnie Farmer  
Joseph SENYK  
Richard W. Firth  
Kirsten Krueger  
Norma V Reyes  
Derek Little

Wendy Crannage  
Natalie Fahmy  
Marc Koslen  
Mary Miller  
Barry Moyer  
Russell Vreeland  
Gwen Corrie  
Ms Gloria Hughes  
Angela Judy  
Emily White  
Lauren Mora  
David Newlin  
Duke Lokka  
Jim Kline  
Thomas Layman  
Andrea Floyd  
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Cynthia Ghafari  
Heidi Hubbell  
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Catharine Garber  
Richard Rutherford  
Jeff Nein  
Gerald Oefelein  
Joseph Gebron  
Mel Hardy  
Denise Kozminsky  
Richard Lisi  
Joellyn St. Pierre  
William Morris  
L A  
Melodie Middlebrooks  
Shirley Burt  
Christa Hushon  
Laura Lawrence  
Jeff Diamond  
Barbara Schelstrate  
Kathleen McLane  
Richard McLane  
Diana Woodcock  
Mark Fink  
Betty Plummer  
Betty Ford  
Betty Ford  
Brian Kelley  
Lloyd Parcell

Erin Mccarty  
Jo Scott  
Peggy Harris  
Lloyd Parcell  
Laura Shrader  
Sarah-Beth Hamer  
Derek Meyer  
Shane Christian  
Laura Shrader  
Greg Dunnivant  
Nancy Parsons  
Lori Maxfield  
Jane & Robert Anthony  
Deborah Harris  
Barbara Zibordi  
Sharon Boots  
Joe Harman  
Connie Sale  
Tina Trice  
Ann Bicking  
Uwe Dotzauer  
Anthony Jordan  
Anthony Jordan  
Mary K Baumeister  
Frederick Calhoun  
Kimberly McDonald  
Sarah Reese  
Anne Blowers  
Judy Robertson  
Bill Richards  
Judith Bush  
Michael King  
Margaret Lavinder  
Angelica Freitag  
David Forbes  
Grace Holden  
J. Richard Allen, Ph.D.  
Thomas LeBlanc  
VIK sarakula  
Louise Wallace  
Vera Godard  
Russell Nadel  
Marcy Lauer  
Anne Brophy  
Tom Hoffman  
Judith and Howard Kator

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Tracy Weldon  
Duane Benton  
Avra Leigh  
Caroline Kemper  
Sharon Davlin  
Jon Kalbfleisch  
Arthur Swers  
David Scherer  
John L Grannis  
Laura Simon  
Elizabeth Tabony  
mary bartlett  
Marilyn Brainard  
Robert Shippee  
Douglas Scherer  
Bill Wickham  
Ann Srubek  
Sandra Kerr  
Suzan Albright  
Suzanne Yeaman  
Christie Walker  
Daren Brady  
Fancy Elliott  
Kathy Kelly  
Elizabeth Krebes  
Lynda West  
Barbara Franko  
Patti Vaticano  
Mary Grant  
Jonathan Hotz  
Peter Sayre  
Matthew Boyce  
annette littman  
George Bilyeu  
Scott Railton  
J D  
annette littman  
Betty Gentry-Metzler  
Eric Keller  
Jeannette Episcopo  
William Frear  
Elise Balcom  
Tim Schmitt  
Todd Wolf  
Brian Ceppi

Jeffrey Hollar  
Victor Escobar  
Cathy Brunick  
Joyce Lane  
Suzanne Keller  
Janet Drew  
Mary Ann McFarland  
shirley jenkins  
Blair Lawrence  
Debby Mercer  
Pamela Townsend  
Ninon Estinto  
Lorna Charlton  
Robin Bergman  
Thomas Edmonds  
Steven Urquhart  
Shakayla Thomas  
Sharon Wright  
Gary Harris  
Pamela Jiranek  
Daniel Hoeck  
Linda McDougal  
Diane Rohn  
Anna Hendrick  
Janet Moncure  
Frances Lynn Jenkins  
Janet Paisley  
Frank & Jean Carlton  
Jade Fowler  
Sylvia Stack  
Angus M Macdonald  
Jeanette Taylor  
Jeffrey Schnebelen  
Chad Ross  
Kevin Silas  
David Campbell  
Kimberley Homer  
Jonathan Cruise  
Ruth Carlone  
Anne Bedarf  
Sylvia Jeans  
Richard Wilkin  
Linda Coffelt  
Margaret Plantz  
Jeremy Carter  
Natasha Peterson

Dan Showers  
Robert B. Youngblood  
Michael Goodman  
Mary Schoof  
Michael Johnson  
Eleanor Anderson  
Mary Schoof  
Carol Graves  
Louisa Bradford  
David Herdman  
Sterling Proffitt  
Kathy Day  
William Owen  
Faye Bailey  
Faye Bailey  
Faye Bailey  
Isabel Tirath  
Fred Karlson  
Alan Harper  
Atlas Robinson  
Daniel Giesy  
Carol De Long  
Deede Snowwhite  
Martha Kossoff  
Greta Bollinger  
Randall Nord  
Erika Boka  
Sheryl Smith  
Charlotte Shnaider  
Betty Reiser  
Kathleen Luisa  
Rebecca Taylor  
Wayne Teel  
Jill Shephard  
Janette Martin  
Mindy Fogel  
Ted Gelletly  
elliott roberts  
Julia Dorsey Loomis  
Wendy Hirsch  
Deborah Allen  
Elaine Dessouki  
Patrick Cosgrove  
Philip de Vos  
Rebecca Trexler  
Michelle Dail

C Stevens  
Shane Dunne  
Peggy Gilges  
Pearl Raikin  
Irwin Flashman  
DeeDee Tostanoski  
Kay Hudson  
Courtney Birkett  
James Bleakley  
Michael Ratcliffe  
Brenda Stepp  
John Hunter  
Andrew Smith  
Norma Kacen  
Sandra Rohde  
Jacqueline Cooperman  
Matthew Taylor  
Alex Brudno  
A Athavale  
Mary Cunningham  
Dorothea Beutel  
Mark Emlet, PA  
Ellen Powers  
Rebekah Paulson  
Kenneth Fisher  
Nancy Roeber  
Marianne McDermott  
Christopher Dunn  
Jennifer L Horn  
Gregory Bowers  
Glenda Bromberg  
Tara Wheeler  
Herschel Wolfe  
Marianne Arcuni  
Lori Nelson  
Meghan Blydenburgh  
Malcolm Crosbie  
Jim Dixon  
Gerald Malovany  
Valerie Brown  
Judith Pelletier  
Senseney Marshall  
Sharon Peery  
Priscilla Glynn  
Tracey Aquino  
Rosi Martin

Newton Teichmann  
Jonathan Gallagher  
Jonathan Falin  
Madison Crouch  
Janice McConnell  
Paulette Kaplan  
Storm Cunningham  
Mary Guilfoyle  
Catharine W. Tucker  
Lee Politis  
Tomeka Watkinson  
Melissa Reisland  
Adam Dâ€™Onofrio  
Jennifer Sinek  
Nancy Maurelli  
Hope Sellon  
Susannah Smith  
Jason Green  
Elaine Mills  
A W  
Oscar Benitez  
Anita Barrera  
Iris Zhan  
Mary Grant  
Shannon Fletcher  
David Douglas  
Alicia Souder  
Kristen Mattioni  
Sarah Sebrell  
Jean Busboso  
Miranda Honeycutt  
Louis Spector  
Sam Hathorn  
Mary Hard  
Janelle Peters  
Edward Tompkins  
Kelly Place  
Bonnie Claggett  
clara zahadek  
Daniella Nissen  
Vicki Laub  
Elisabeth Brisebois  
Anthony Kerr  
Tom Aub  
William Welkowitz  
sarah bernardi

Stephanie Colburn  
Timothy Werner  
Linda Schramm  
Joy Loving  
Leila Jalili  
Theresa Morris  
Judith E. Vido  
Margaret Dyson-Cobb  
Elaine Becker  
J Porray  
Donna Feirtag  
Erin Rothman  
Don Barber  
Eedy Nicholson  
Helen Hamilton  
Lucinda Nicholson  
Shirley Midyette  
Kenda Hanuman  
Rhonda Dennis  
Carlye McGinley  
Norma Riley  
Pauline Cooper  
M. de Voursney  
Elizabeth Spragins  
Martha Smythe  
Heidi Dhivya Berthoud  
Charity Moschopoulos  
Janet Gooch  
Annette Minnis  
Diana Lahey  
David McNiff  
Amanda Loy  
Leslie Jacobs  
Dayle Severns  
Gina Stiff  
Mary Parker  
Susan Schorin  
Judith Etheredge  
Carinne Boord  
Felicia Etzkorn  
Heather Nolen  
Theresa Steverlynck  
Avi Gordon  
Pam Tinker  
Jeffrey Clark  
Alexandra Pierschalla

Kelly Saunders  
Linda Evans  
Caroline Tryon  
Karen Spurr  
Donna Josaitis  
Maria Godbey  
Marcia Fairman  
Michelle Elwyn  
Elizabeth Paule  
Merrill Boone  
Krista Zember  
Dana Lindholm  
Sandra Uribe  
Peter Fontneau  
Susan Miller MD  
robert pool  
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Mrs Bradshaw  
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Scott Zellner  
Connie Staley  
Joseph Abbate  
Noelle Prince Shear  
Joshua Lies  
Jonathan Gottlieb  
Mark Koritz  
Domenic Ciccolella  
Sigrid Kilcullen  
Jodie Felice  
Annette Straubinger  
Dorothy Johnson  
Brandon Schepp  
Stacey Wickens  
Stacey Wickens  
Jack Mu  
Stephen Moreland  
Regina Hawk  
Valerie Hubbard  
Kenneth Lederman  
Charlene Jarrett  
Charlene Jarrett  
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Charlene Jarrett  
Joseph Harper  
Nancy Mattson  
Cynthia Howell

Melody Maynard  
Ruth Dreman  
David Patrick  
David Loomis  
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Frank Schmidt  
Howell Perkins  
Howell Perkins  
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Ronald Smith  
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Kathryn Squires  
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Elizabeth Reed

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 CB Hung  
 Flora Adams

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 Bob Robinson  
 Brian Robertson  
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 Lynda Wiseman  
 Janis Chevalier  
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 A J Hawkins  
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 Benjamin Rhoades  
 Hazel Mcleod  
 Diann Presley  
 Colleen Demetro  
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 Glenda Regan  
 Rea Howarth  
 Suzanne Ackert  
 Patrick Brooks  
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 Bruce and Penny Triplett  
 Jeriene Walberg  
 Natalie Lilja  
 Nancy Schwall  
 Pamela Nowell  
 Taffi Newhouser  
 Melinda Rau  
 Evelyn Way  
 Barbara Brunson

Ruth Sievers  
 George Ball  
 Michael Mastropaolo  
 Jim Lindsay  
 Sara Roderer  
 Bruce Brunson  
 Diane Berlin  
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 crystal hart  
 Lawrence Jacksina  
 Patricia Rowell  
 Elizabeth Deogratias  
 Pat Randall Jr  
 Elizabeth Struthers Malbon  
 Cheryl Arthur  
 Derrick Jenkins  
 Elizabeth Meni  
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 Swami Daasyaananda  
 Anima Chi  
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 Wanda Overstreet  
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 N. Lee  
 N. Lee  
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Carolyn Sandberg  
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Heather Taylor  
T Morris  
Suzanne Kistner  
Diann Inge, MA. MS. LPC  
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Chanda Diep  
Gwendolyn Beckley  
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diana artemis  
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R Christensen  
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Michele Shaw  
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Melissa Meade  
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Margaret Dyre  
Debbie Chenoweth  
Ashlee Pritchett  
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Lora Hamrock  
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Tassany Prasoeuthsy  
Stacy Clark  
Ian Whitney  
Jessi Hervey  
Helen Torosian  
Andreina Frazier  
Chloe Church  
Roz Gothro  
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Christine Cravey  
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Marion Glass  
Rick Miller  
Logan Hurd  
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mary ann rudy  
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Jessica Alley  
Rebecca Sponga  
Constance Porter  
Mildred Long  
Jason Klinkel  
Don Barth

Don Barth  
Eamon Robinson  
Kiley Ennas  
Mary Circle  
Valerie Farrell  
Egan Robinson  
Muriel Heanue  
Charles Gates  
Miriam Brancato  
Tanya Mesirow  
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Marcus Walther  
James Trimm  
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Christy Wente  
Tayler Jones  
DARIA Stoll  
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Vicki Gaffney  
Alexander Feliciano  
Paul Kaplowitz  
Angela Atkins  
Aneesha Ramesh  
Aneesha Ramesh  
Mrs Bradshaw  
Mrs Bradshaw  
Douglas Murray  
Jeanette Hess  
Frank & Jean Carlton  
Jean Hornberg  
Amelia Williams  
Joan Tanner  
Lynn Lambeth  
Linda Liptak  
Laureen Quattrini  
Susan Richmond  
Courtney Sulak  
Carolyn Barker  
Lindsay Pugh  
Claudia Rivera  
Nancy Partin

Sheldon Blumenfeld  
Kimiyo Watanabe  
Mitchell Miles  
Jennifer Jones  
Stephanie Schultz  
Judy Barnhart  
Robert Leggett  
Serenity Smile  
Pat Petro  
kristin gallanosa  
Marcia Carter  
Andrew Panelli  
Aida Schimmel  
Aida Schimmel  
Jason Waldrop  
Carol Myers  
C. Kasey  
Nancy Miller  
Anne W.  
Constance Pearlstein  
Barbara Abraham  
Ali Fay  
Carol Rubin  
Chanda Diep

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR AND RENEWABLE ENERGY DIVISION  
PUBLIC HEARING

To receive comment on a  
draft minor-source construction permit.

IN RE: BUCKINGHAM COMPRESSOR STATION

Buckingham County Middle School

September 11, 2018

5:00 p.m to 9:32 p.m.

Reported by Gwendolyn Sugrue

Job No. 36787

Full-text of  
public hearing  
available on website



Air Division 1, rr &lt;airdivision1@deq.virginia.gov&gt;

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**Buckingham Compressor Station - 2nd Comment**

1 message

Jeeva Abbate <jeeva@yogaville.org>  
To: airdivision1@deq.virginia.gov

Tue, Sep 11, 2018 at 12:14 AM

Virginia Department of Environmental Quality  
Piedmont Regional Office  
Buckingham Compressor Station  
4949-A Cox Rd  
Glen Allen, VA 23060

Joseph Jeeva Abbate  
12 Ramaa Lane,  
Buckingham, VA 23921  
Phone: 434-969-3121  
Date: August 28, 2018

Dear DEQ,

I am a concerned resident in the Buckingham community, living and working in the area around the proposed location of the ACP Buckingham Compressor Station. I do not believe that any amount of toxic pollutants emitted from the Compressor Station is healthy for my community, my family, or myself.

To ensure that the installation of the proposed ACP Buckingham Compressor Station is appropriately permitted and monitored, I am recommending the following modifications (as recommended from the research and analysis of Dr. Curtis Lorin Nordgaard, MD, MSc, Pediatrics, Boston, MA) to the draft Stationary Source Permit for Atlantic Coast Pipeline, LLC to construct and operate a natural gas compressor station in our community in Buckingham:

**1 ACP should notify local authorities prior to each venting event*****Background***

Venting events have the potential to cause disruption and/or nuisance if detected by the public. For example, detecting natural gas odors may result in calls to and activation of local EMS services. ACP should therefore notify local authorities prior to each venting event.

**Add a permit condition under Notifications:**

"The permittee shall notify the local Board of Health or equivalent entity and the local fire department at least 24 hours prior to each planned or maintenance venting event".

## **2 DEQ should require regular analysis and reporting of natural gas composition.**

### *Background*

Based upon independent measurements, natural gas contains a large and complex set of VOCs (many of which are hazardous air pollutants and/or known or suspected carcinogens).

There is a research group in the Boston area that has taken independent measurements of VOCs in natural gas samples. A recording of a short presentation describing the study and its results can be found here:

<http://www.bu.edu/earth/naturalgaspublichealth/>

There is a link on the page to "morning session", the presentation of interest starts in that video around 1 hour 13 minutes.

### Condition 16: Fuel Monitoring

Should be modified to ensure that ACP is periodically measuring VOC composition and concentrations in gas flowing through the facility, as this is the gas that will be leaked or released as fugitive and venting emissions.

Replace sentence 2 as follows:

"The permittee shall perform annual fuel analysis of on-site natural gas. The details of the tests shall be arranged with the Piedmont Regional Office. Tests shall identify, at a minimum, VOCs typically reported for EPA methods TO-15 or TO-17 for VOC analysis, and use similar or better reporting limits."

## **3 DEQ should require the most recent and stringent emissions controls for pigging operations**

### *Background*

A pipeline operator, MarkWest, recently (Apr 2018) reached an agreement with the EPA as a consequence of the company's likely violation of the Clean Air Act during its pipeline pigging operations (see <https://www.epa.gov/enforcement/markwest-clean-air-act-settlement-information-sheet>). As a result of the consent decree, MarkWest is going to publicly release design plans for emissions control technology that will reduce VOC emissions from pigging operations ("Pig Ramps") as well as educational materials for other technology to reduce VOC emissions from pigging operations ("Jumper Lines"):

"MarkWest will disseminate and make available for use by other oil and gas companies its proprietary design for Pig Ramps, which has been shown to reduce liquid accumulation and emissions from pig launcher and receiver operations. In order to promote the rapid adoption of this innovative device, MarkWest will make available on a public website, no later than six (6)

months after the Effective Date, a royalty-free license and information on the Pig Ramp design. MarkWest will also provide educational presentations and host four demonstration or training sessions per year over a three-year period (for a total of 12 sessions), with technical staff available in-person at each session, to demonstrate and encourage the installation and adoption of the technologies developed by MarkWest to reduce VOC emissions from pig launchers and receivers throughout the oil and gas industry. In conjunction with such presentations and demonstrations, MarkWest will develop comprehensive and detailed educational materials on the effective installation, maintenance, and use of Pig Ramps and Jumper Lines to reduce VOC emissions from pig launchers and receivers.”

- MarkWest consent decree, section VI, paragraph 28, pg. 16

#### New Condition:

DEQ should add an Emission Control condition stating that Pig Ramps and Jumper Line technologies be added to pigging facilities within 12 months of their design release by MarkWest. DEQ should release an addendum to the permit once it has determined the operating, testing, and recording conditions for these technologies.

#### **4 Fugitive & vented emissions**

##### Condition 7(b): Emissions Controls

Condition 7 outlines a program to detect and repair leaks that generally follows recent EPA guidelines.

After sentence 4, **insert a sentence** stating that if difficult to repair leaks are small enough to defer repair, then they should be repaired the next time the facility is shut down (unless delaying the repair would result in greater emissions than would result from facility shutdown):

“If a leak is found that will emit less natural gas than a facility shutdown, its repair may be delayed until the next facility shutdown unless the summed aggregate of delayed repair natural gas emissions would exceed the natural gas emissions of a facility shutdown.”

Change last sentence to:

“Records of the daily AVO inspection results, repair attempts...and reason for each delay **shall be submitted on a (monthly/quarterly/annual?) basis to the Piedmont Regional Office and also maintained on site.**”

##### Condition 51: (SOE) On Site Records

This permit condition should be revised to ensure availability of detailed hexane venting emissions data.

Sentence 4: Change "...calculate the amount of hexane exhausted during **any** venting event." to "...calculate the amount of hexane exhausted during **each** venting event."

Sentence 5: Change to "**Hexane emissions shall be calculated monthly and recorded as the emissions for each venting event, as well as** the sum of each consecutive 12-month period."

Sentence 7: Change to "**These records shall be submitted to the Piedmont Regional Office (monthly/quarterly/annually?) and kept on site available for DEQ inspection...**"

Additional points:

Criteria pollutants are harmful at concentrations or time intervals that do not violate NAAQS. A partial list of supporting peer-reviewed research includes the following studies:

"Ambient air pollution and the risk of ischemic stroke."

Journal of the American Medical Association, Internal Medicine.

<https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/1108717>

"Ambient fine particulate air pollution triggers ST-elevation myocardial infarction but not non-ST elevation myocardial infarction: A case-crossover study."

Particle and Fibre Toxicology.

<https://particleandfibretoxicology.biomedcentral.com/articles/10.1186/1743-8977-11-1>

"Low-concentration PM2.5 and mortality: Estimating acute and chronic effects in a population-based study."

Environmental Health Perspectives.

<https://ehp.niehs.nih.gov/1409111/>

"Fine particulate matters: The impact of air quality standards on cardiovascular mortality".

Environmental Research.

<https://www.ncbi.nlm.nih.gov/pubmed/29195185>

"The concentration-response between long-term PM2.5 exposure and mortality: A meta-regression approach."

Environmental Research.

<https://www.ncbi.nlm.nih.gov/pubmed/30077140>

"Association of short-term exposure to air pollution with mortality in older adults."

Journal of the American Medical Association.

<https://jamanetwork.com/journals/jama/fullarticle/2667069>

"Low level air pollution and exacerbation of existing COPD: A case crossover analysis."

Environmental Health.

<https://ehjournal.biomedcentral.com/articles/10.1186/s12940-016-0179-z>



"Concentration-response of short-term ozone exposure and hospital admissions for asthma in Texas."

Environment International.

<https://www.ncbi.nlm.nih.gov/pubmed/28434561>

Thank you,

Joseph Jeeva Abbate

--

**Joseph Jeeva Abbate**

Yogaville Environmental Solutions

108 Yogaville Way

Buckingham, VA 23921

office: 434-969-3121, X172

mobile: 703-626-6385

email: [jeeva@yogaville.org](mailto:jeeva@yogaville.org)



Air Division 1, rr &lt;airdivision1@deq.virginia.gov&gt;

**Buckingham compressor QRA-- comment and request for information**

1 message

**Eleanor** <eamidon@hotmail.com>

Thu, Aug 30, 2018 at 10:51 AM

To: "airdivision1@deq.virginia.gov" <airdivision1@deq.virginia.gov>, "michael.dowd@deq.virginia.gov" <michael.dowd@deq.virginia.gov>, "patrick.corbett@deq.virginia.gov" <patrick.corbett@deq.virginia.gov>

- **PERMIT NAME:** Minor Source Construction Permit issued under the authority of the Air Pollution Control Board
- **APPLICANT NAME AND REGISTRATION NUMBER:** Atlantic Coast Pipeline, LLC; 21599
- **FACILITY NAME AND ADDRESS:** ACP – Dominion Energy Buckingham Compressor Station; 5297 S. James River Hwy, Wingina, VA 24599
- **Comment from:** Eleanor Amidon  
931 Tanbark Dr.  
Afton, VA 22920  
540 456-8506

Has anyone done a quantitative risk assessment (QRA) of the proposed compressor station? For such large and complex projects, often QRA studies are done to help demonstrate that risks are as low as reasonably practicable (ALARP), among other things. Has Dominion/ACP done a QRA? If so, please make the results available to the public. If not, DEQ should require a QRA study to be completed, and evaluated by DEQ, before issuing any air permit.



Air Division 1, rr &lt;airdivision1@deq.virginia.gov&gt;

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**comment on draft air permit for Buckingham Compressor Station**

1 message

**Eleanor** <eamidon@hotmail.com>

Fri, Aug 24, 2018 at 11:13 AM

To: "airdivision1@deq.virginia.gov" &lt;airdivision1@deq.virginia.gov&gt;

- **PERMIT NAME:** Minor Source Construction Permit issued under the authority of the Air Pollution Control Board
- **APPLICANT NAME AND REGISTRATION NUMBER:** Atlantic Coast Pipeline, LLC; 21599
- **FACILITY NAME AND ADDRESS:** ACP – Dominion Energy Buckingham Compressor Station; 5297 S. James River Hwy, Wingina, VA 24599
- **Comment from:** Eleanor Amidon  
931 Tanbark Dr.  
Afton, VA 22920  
540 456-8506

Please consider adding the following two conditions to the draft air permit.

**Condition 1: Permittee Accepts Legal Responsibility and Agrees to Indemnification**

The permittee expressly agrees to indemnify and hold harmless the Virginia Department of Environmental Quality, its representatives, employees and agents ("DEQ") for all claims, suits, actions, and damages, to the extent attributable to the permittee's acts or omissions in connection with the compliance permittee's undertaking of activities in connection with, or operation and maintenance of, the facility or facilities authorized by the permit whether in compliance or not in any compliance with the terms and conditions of the permit. This indemnification does not extend to any claims, suits, actions, or damages to the extent attributable to DEQ's own negligent or intentional acts or omissions, or to any claims, suits, or actions naming the DEQ and arising from any citizen suit or civil rights provision under federal or state laws.

**Condition 2: Permittee's Contractors to Comply with Permit**

The permittee is responsible for informing its independent contractors, employees, agents and assigns of their responsibility to comply with this permit, including all special conditions while acting as the permittee's agent with respect to the permitted activities, and such persons shall be subject to the same sanctions for violations of the law as those prescribed for the permittee.



Air Division 1, rr &lt;airdivision1@deq.virginia.gov&gt;

**Buckingham Compressor Station air permit comment**

1 message

**Eleanor** <eamidon@hotmail.com>

Thu, Aug 30, 2018 at 12:16 PM

To: "airdivision1@deq.virginia.gov" <airdivision1@deq.virginia.gov>, "michael.dowd@deq.virginia.gov" <michael.dowd@deq.virginia.gov>, "patrick.corbett@deq.virginia.gov" <patrick.corbett@deq.virginia.gov>

- **PERMIT NAME:** Minor Source Construction Permit issued under the authority of the Air Pollution Control Board
- **APPLICANT NAME AND REGISTRATION NUMBER:** Atlantic Coast Pipeline, LLC; 21599
- **FACILITY NAME AND ADDRESS:** ACP – Dominion Energy Buckingham Compressor Station; 5297 S. James River Hwy, Wingina, VA 24599
- **Comment from:** Eleanor Amidon  
931 Tanbark Dr.  
Afton, VA 22920  
540 456-8506

Just as air quality and water quality should be monitored before, during, and after construction, and throughout the entire lifecycle of the compressor station, so the quality of human health in the surrounding area should be monitored.

The Environmental Protection Agency (EPA) gives a wealth of material on human health risk assessments (HRA) on this website:

<https://www.epa.gov/risk/conducting-human-health-risk-assessment>

DEQ should add several conditions to the draft air permit concerning the monitoring of human health impacts. First, require a study on the potential impacts to the general population, within radii of one mile, two miles, and five miles of the proposed compressor station. This study should be available to the public. Second, require that individual health assessments be conducted for all residents living within five miles of the proposed compressor station. These would be shared with the individuals and, with the individual's permission, with their health care providers. Often effects of toxins are cumulative, so individual health assessments should be repeated on a yearly basis, for twenty years. DEQ or a cooperating state agency would save the data for future studies.

The World Health Organization (WHO) gives guidelines for producing a health impact assessment (HRI) at <http://www.who.int/heli/impacts/hiabrief/en/>

and the EPA provides information at

<https://www.epa.gov/healthresearch/health-impact-assessments>

The Federal Energy Regulatory Commission (FERC) should have required a HRI study as part of the Environmental Impact Statement (EIS), but since they did not, it falls to DEQ to add a comprehensive HRI study as a condition in their air permit. This approach attempts to involve all stakeholders, and the focus is on what to do to promote healthy communities. Its importance to decision-makers like DEQ is to make them aware of potential outcomes before any decision is made.



Air Division 1, rr &lt;airdivision1@deq.virginia.gov&gt;

**comment on proposed Buckingham compressor station air permit**

1 message

**Eleanor** <eamidon@hotmail.com>

Fri, Aug 31, 2018 at 9:15 AM

To: "airdivision1@deq.virginia.gov" <airdivision1@deq.virginia.gov>, "michael.dowd@deq.virginia.gov" <michael.dowd@deq.virginia.gov>, "patrick.corbett@deq.virginia.gov" <patrick.corbett@deq.virginia.gov>

- **PERMIT NAME:** Minor Source Construction Permit issued under the authority of the Air Pollution Control Board
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931 Tanbark Dr.  
Afton, VA 22920  
540 456-8506

The air quality of the troposphere, the layer of air closest to the surface of the earth, can be heavily influenced by atmospheric conditions. For example, thermal inversions can interrupt normal air circulation and cause air in a given region to remain there. If an inversion were occurring over the proposed compressor station during a discharge of toxic emissions, the toxins would remain in the area longer, subjecting anyone breathing in the area to prolonged exposure.

The National Oceanic and Atmospheric Administration's (NOAA) Earth System Research Laboratory (ESRL) conducts research monitoring various aspects of the atmosphere. Monitoring and understanding trends in surface radiation, clouds, and aerosols is one area of the Global Monitoring Division's (GMD) research. See <https://www.esrl.noaa.gov/gmd/about/theme2.html>

Before issuing any air permit, DEQ should consult with NOAA/ESRL/GMD to determine air conditions and trends in the Buckingham area, to see if air conditions are compatible with the proposed operational schedule of the proposed compressor station. Conditions should be written into the permit to require the station operators to maintain daily logs of local atmospheric condition data and to prevent them from scheduling blowdowns or other emission events during periods when the air is not circulating normally.



Air Division 1, rr &lt;airdivision1@deq.virginia.gov&gt;

## comment on ACP proposed compressor station in Buckingham

1 message

Eleanor &lt;eamidon@hotmail.com&gt;

Mon, Sep 3, 2018 at 10:22 AM

To: "airdivision1@deq.virginia.gov" <airdivision1@deq.virginia.gov>, "michael.dowd@deq.virginia.gov" <michael.dowd@deq.virginia.gov>, "patrick.corbett@deq.virginia.gov" <patrick.corbett@deq.virginia.gov>

- PERMIT NAME: Minor Source Construction Permit issued under the authority of the Air Pollution Control Board
- APPLICANT NAME AND REGISTRATION NUMBER: Atlantic Coast Pipeline, LLC; 21599
- FACILITY NAME AND ADDRESS: ACP – Dominion Energy Buckingham Compressor Station; 5297 S. James River Hwy, Wingina, VA 24599
- Comment from: Eleanor Amidon  
931 Tanbark Dr.  
Afton, VA 22920  
540 456-8506

In many conditions within the permit, the time limits for acting and reporting seem arbitrarily long. Shorter time spans would necessitate more timely actions, and earlier reports would inform DEQ of potentially harmful situations, and would allow people in the area to be notified more quickly. Dominion/ACP needs to notify residents when blasts of toxic emissions are about to enter or have recently entered their atmosphere, especially regarding peak emissions. This should be added as a new condition to the draft permit, with a detailed plan of how residents will be notified of both scheduled and emergency events.

Here are some suggestions pertaining to the draft air permit.

Under Process Requirements, Condition #7:

b. "The first attempt to repair any fugitive emissions component found to be leaking during an AVO inspection or a quarterly survey shall be made as soon as practicable but no later than 5 days after discovery." Change from 5 days to 2 days. In the phrase "shall be repaired within 15 days of discovery," change 15 days to 7 days.

Under Process Requirements, Condition #7, Emission Controls, please add this subsection:

e. Daily audio/visual/olfactory (AVO) observations will be recorded including the date and the full name of the observer who conducted the inspection/reading.

Under Operating Limitations, Condition #14: change so that a change in fuel WILL (not "may") require a new or amended permit.

Under Operating Limitations, Condition #14: in "test results shall be submitted to the Piedmont Regional Office no later than 60 days after test completion" change 60 days to 7 days.

Condition #17 states, "Operating Hours – The emergency engine (EG-01) shall be operated for the purposes of maintenance, testing, and emergencies (as defined in 9VAC5-80-1110C) only. The emergency engine (EG-01) shall not operate more than 500 hours per year, calculated monthly as the sum of each consecutive 12-month period." The relevance of the definitions given in 9VAC5-80-1110C at <https://lis.virginia.gov/cgi-bin/legp604.exe?000+reg+9VAC5-80-1110>

are very obscure. This permit condition should be clearer about maintenance and testing requirements and schedules for the emergency engine. Please state clearly the number of events of venting of emissions that are allowable, given the required maintenance and testing of the emergency engine.

Under Testing, Condition #29: in "The tests shall be performed, reported, and demonstrate compliance within 60 days after achieving the maximum production rate at which the facility will be operated but in no event later than 180 days after start-up..." change 60 days to 7 days, and change 180 days to 21 days. Also, in "One copy of the test results shall be submitted to the Piedmont Regional Office within 60 days after achieving the maximum production rate at which the facility will be operated but in no event later than 180 days after start-up..." change 60 days to 7 days, and change 180 days to 21 days.

Under Testing, Condition #30: as in the suggestions for Condition #29 above, change the time limits from 60 and 180 days to 7 and 21 days.

Under Testing, Condition #31: change from repeating the tests "every two years" to "yearly." Change "no later than 26 months" to "no later than 12 months." Change "no later than 60 days after test completion" to "no later than 7 days after test completion."

Under Testing, Condition #32: change "or 36 months, whichever is earlier" to "or 12 months, whichever is earlier." Change "no later than 60 days after test completion" to "no later than 7 days after test completion."

Under Testing, Condition #33: in "The initial test shall be performed, reported, and demonstrate compliance within 60 days after achieving the maximum production rate at which the facility will be operated but in no event later than 180 days after start-up of the permitted facility" change 60 days to 7 days, and change 180 days to 21 days. Similarly, in "One copy of the test results shall be submitted to the Piedmont Regional Office within 60 days after achieving the maximum production rate at which the facility will be operated but in no event later than 180 days after start-up..." change 60 days to 7 days and 180 days to 21 days.

Under Testing, Condition #34: in "The initial evaluation shall be performed, reported, and demonstrate compliance within 60 days after achieving the maximum production rate at which the facility will be operated but in no event later than 180 days after start-up ..." change 60 days to 7 days, and change 180 days to 21 days.

Under General Conditions, Condition #43: in "within 14 days of discovery of the malfunction," change 14 days to 3 days.

Under State-Only Enforceable (SOE) Requirements, Condition #49: similar to Conditions #29 and #31, change, in both occurrences, 60 days to 7 days, and 180 days to 21 days.

Under State-Only Enforceable (SOE) Requirements, Condition #50: similar to Conditions #30 and #32, change, in both occurrences, 60 days to 7 days, and 180 days to 21 days.



Air Division 1, rr &lt;airdivision1@deq.virginia.gov&gt;

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**Comments re: Buckingham Compressor Station 21599 - EIP & App Voices**

1 message

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**Peter Anderson** <peter@appvoices.org>

Fri, Sep 21, 2018 at 5:25 PM

To: airdivision1@deq.virginia.gov

Cc: Benjamin Kunstman &lt;bkunstman@environmentalintegrity.org&gt;, michael.dowd@deq.virginia.gov

Good afternoon,

Environmental Integrity Project and Appalachian Voices respectfully submit the attached comments regarding a draft permit for the Buckingham Compressor Station.

Thank you.

---

Peter Anderson  
Virginia Program Manager  
Appalachian Voices  
812 E. High Street  
Charlottesville, VA 22902  
(434) 293-6373 office  
(434) 249-6446 cell



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**EIP - App Voices Comments - Buckingham Comp Station 21599.pdf**

755K





ENVIRONMENTAL  
INTEGRITY PROJECT



Appalachian  
Voices

September 21, 2018

Air Pollution Control Board  
c/o Office of Regulatory Affairs  
Department of Environmental Quality  
P.O. Box 1105  
Richmond, Virginia 23218

David Paylor, Director  
Department of Environmental Quality  
1111 East Main Street, Suite 1400  
Richmond, VA 23219

**Re: Comments on Draft Stationary Source Permit to Construct and Operate Compressor Station 2 for Atlantic Coast Pipeline, LLC # 21599**

Dear Director Paylor, Chairman Langford, and Members of the Air Pollution Control Board:

Appalachian Voices is a 501(c)(3) nonprofit organization advocating for healthy communities in Central and Southern Appalachia, with a focus on an equitable and just transition to a clean energy economy. Due to our organizational emphasis on justice and equity in the region, we have a heightened interest in the draft permit for a compressor station project sited in Buckingham County, Virginia. The compressor station proposed by Atlantic Coast Pipeline, LLC ("ACP") would be sited within an identified environmental justice community whose demographic is 85% African American, undoubtedly creating a disproportionate pollution impact.

The Environmental Integrity Project is a nonprofit, nonpartisan organization that empowers communities and protects public health and the environment by investigating polluters, holding them accountable under the law, and strengthening public policy.

We respectfully offer the following comments to the Department of Environmental Quality (herein "the Department") regarding the Draft Stationary Source Permit to Construct and Operate Atlantic Coast Pipeline Compressor Station 2 located at 5297 S. James River Hwy, Wingina, in Buckingham County, Virginia.

***The Department should replace the proposed stack tests for regulated pollutants with a requirement for continuous emission monitoring systems (CEMS)***

The monitoring requirements contained in the Draft Permit are not adequate to ensure compliance with the emissions limits set out therein because they do not require continuous or even frequent measurement of outgoing pollutant concentrations from the compressor turbines. For example, the performance tests set out in Condition 29 of the Draft Permit for emissions of nitrogen oxides (NOx), carbon monoxide (CO), volatile organic compounds (VOC), and particulate matter (PM10 and PM2.5) are only required to be performed upon initial operation and then repeated once every two years thereafter.<sup>1</sup> The Draft Permit states that emissions will be derived from the estimated overall emission contribution from operating limits, rather than direct measurement of pollutant emissions.

These criteria pollutants have a high potential to adversely impact human health in concentrations above federal standards. However, if emissions controls and other equipment cease to perform at the required level, a problem might go undetected for months or years. Continuous emission monitoring systems (CEMS) for regulated pollutants should replace the stack tests set out in Conditions 29, 30, 31, 32, 49, and 50 in order to ensure compliance with the permit's emissions limitations.<sup>2</sup>

In particular, the Department's potential to emit (PTE) calculations are based on the assumption of near-constant achievement of a 3.75 ppm NOx rate at each compressor turbine and near-constant operation of selective catalytic reduction (SCR). There are several factors that could interfere with achieving this rate in practice. Therefore, it is critical that compliance with the enforceable NOx limit of 3.75 ppm in the Draft Permit is assessed using CEMS for NOx.

***The Department must revise the draft permit to prohibit ACP from operating the compressor turbines below 50% capacity except during the limited start-up/shutdown events included in PTE calculations.***

As acknowledged in the Department's own engineering analysis, the SoLoNOx control efficiency for the compressor turbines is diminished at low loads (below 50% capacity),<sup>3</sup> which results in significant increases in NOx, VOC, and CO emissions as seen in the attached product information letter from the turbine manufacturer.<sup>4</sup> At operating loads below 50% capacity, CO emissions from the turbines increase to 8,000 ppm, with higher NOx and VOC emissions as well. However, the Department has not included emissions from any low-load operations in its calculation of the compressor station's potential to emit (PTE), other than the limited estimates of start-up and shutdown emissions. With the exception of these start-up and shutdown events,

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<sup>1</sup> Commonwealth of Virginia, Department of Environmental Quality, Draft Stationary Source Permit to Construct and Operate 15 (2018), available at [https://www.deq.virginia.gov/Portals/0/DEQ/Air/BuckinghamCompressorStation/21599\\_BCS\\_DRAFT\\_Permit.pdf](https://www.deq.virginia.gov/Portals/0/DEQ/Air/BuckinghamCompressorStation/21599_BCS_DRAFT_Permit.pdf) ("Draft Permit").

<sup>2</sup> See Draft Permit at 15, 22.

<sup>3</sup> See Commonwealth of Virginia, Department of Environmental Quality, Intra-Agency Memorandum 4, 10 (2018), available at [https://www.deq.virginia.gov/Portals/0/DEQ/Air/BuckinghamCompressorStation/21599\\_BCS\\_DRAFT\\_Analysis.pdf](https://www.deq.virginia.gov/Portals/0/DEQ/Air/BuckinghamCompressorStation/21599_BCS_DRAFT_Analysis.pdf) ("Engineering Analysis").

<sup>4</sup> See Leslie Witherspoon, Solar Turbines, PIL 167 Revision 4, SoLoNOx Products: Emissions in Non-SoLoNOx Modes 2-4 (June 6, 2012) ("PIL 167").

the Department may not exclude hours of low-load operation from PTE calculations unless it prohibits ACP from operating the turbines at low loads in the Permit.

The Engineering Analysis specifically states that the Buckingham Compressor Station “cannot operate below 50% load unless during start-up or shutdown.”<sup>5</sup> However, the Draft Permit fails to specifically prohibit operation below 50% capacity. The Department may not treat operating capacity above 50% as a limitation on the source’s PTE unless that limitation is set forth in the Permit as an enforceable condition. The Department must revise the Draft Permit to prohibit ACP from operating the compressor station below 50% capacity, or account for low-load emissions increases in PTE calculations.

### ***Emissions Rate Limitations Should Apply During Start-Up and Shutdown Procedures***

While the Draft Permit properly limits the total annual hours of start-up and shutdown events for the compressor turbines and the number of hours in which they may take place, it fails to set emission rates on pollutants other than VOCs during these events. The other regulated pollutants limited during operation (CO, NOx, PM, PM10, PM2.5, SO2) should be limited during start-up and shutdown as well. As seen in the turbine manufacturer’s product information letter,<sup>6</sup> additional NOx, CO, and VOC emissions can occur during start-up and shutdown, and should be similarly limited within the permit conditions.

### ***The Department Must Set Emissions Limits for NOx, VOC, and CO from the Turbines During Temperatures Below 0 degrees Fahrenheit.***

Emissions of NOx, VOC, and CO from the turbines can increase significantly at temperatures below 0 degrees Fahrenheit.<sup>7</sup> The Department has included an estimated 5 hours of increased emissions due to such conditions within the Engineering Analysis. While the Department and ACP cannot predict or control the number of hours with temperatures below 0 degrees Fahrenheit that actually occur each year, the Department must still set emissions limits that apply during these periods.

Emissions limits should not be entirely exempted at abnormally low temperatures, and they must be made enforceable conditions of the Permit. Even if the standard limits cannot be met at temperatures between 0 and -20 degrees Fahrenheit, secondary limitations must be set and enforced. The Department’s Engineering Analysis states that the proposed turbines will use the Cold Ambient Temperature Logic, which guarantees emission rates at temperatures between -20 and 0 degrees Fahrenheit for the turbines.<sup>8</sup> The Department should set enforceable limits on emissions below 0 degrees Fahrenheit as these are guaranteed, predictable emissions that should be limited to no higher than the manufacturer specified emission rates with control of NOx, CO, and VOC at 58%, 92% and 50%, respectively.<sup>9</sup>

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<sup>5</sup> Engineering Analysis at 4.

<sup>6</sup> Leslie Witherspoon, Solar Turbines, PIL 170 Revision 5, Emissions Estimates at Start-Up, Shutdown, and Commissioning for SoLoNOx Combustion Products (June 13, 2012) (“PIL 170”).

<sup>7</sup> See PIL 167 at 1-3.

<sup>8</sup> Engineering Analysis at 10.

<sup>9</sup> See PIL 167 at 2.

### ***The Department Should Condition the Permit Upon Pending Greenhouse Gas Regulations***

Virginia is poised to begin regulating carbon dioxide emissions from electric power plants through the regulation being developed under Executive Directive 11. This draft regulation would set limits on large stationary sources' CO<sub>2</sub> emissions, but it ignores the complete lifecycle greenhouse gas emissions from production, transportation, and storage of fossil fuels that are ultimately combusted for electricity generation. Ignoring the greenhouse gas emissions from fossil fuel transportation and storage infrastructure is unnecessarily limiting and ultimately self-defeating.

According to analysis by Oil Change International, lifecycle greenhouse gas emissions from the Atlantic Coast Pipeline are estimated at nearly 68 million metric tons annually, or the approximate equivalent of 20 new coal-fired power plants.<sup>10</sup> Methane leakage and emissions from pipeline operation account for more than half of that total. Further, the Federal Energy Regulatory Commission's Environmental Impact Statement for the Atlantic Coast Pipeline states that the Buckingham Compressor Station alone has the potential to emit 323,736 tons of CO<sub>2</sub>e annually.<sup>11</sup>

But Virginia may not ignore fugitive methane emissions from gas infrastructure much longer. Governor Northam announced on September 12, 2018 that his administration intends to develop regulations limiting methane emissions from natural gas infrastructure.<sup>12</sup> Virginia has broad authority under state law to regulate greenhouse gas emissions, and it now appears likely that "due to inaction at the federal level," the Commonwealth will "take action to limit methane pollution within its borders."<sup>13</sup>

To its credit, the Department outlines several sensible process requirements to control both the venting of natural gas and fugitive emissions from leaks in the Draft Permit.<sup>14</sup> These are important first steps. However, because methane emissions from natural gas infrastructure are likely to be regulated in the future, the Department should take additional steps in the Draft Permit to ensure that this compressor station will meet any future standards promulgated, including a numeric emissions limitation. The Department should add a condition to the Draft Permit explicitly reserving the right of the Department and the Air Pollution Control Board to regulate methane emissions from the Buckingham compressor station in conformity with any future regulation published.

### ***If the Department Cannot Demonstrate That Operation of the Buckingham Compressor Station Will Not Have a Disproportionate Adverse Impact on Environmental Justice***

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<sup>10</sup> Oil Change Int'l, The Atlantic Coast Pipeline: Greenhouse Gas Emission Briefing (Feb. 2017), *available at* [http://priceofoil.org/content/uploads/2017/02/atlantic\\_coast\\_pipeline\\_web\\_final\\_v3.pdf](http://priceofoil.org/content/uploads/2017/02/atlantic_coast_pipeline_web_final_v3.pdf).

<sup>11</sup> Federal Energy Regulatory Commission, Atlantic Coast Pipeline and Supply Header Project Final Environmental Impact Statement 4-559 (July, 2017).

<sup>12</sup> Press Release, Gov. Ralph Northam, Northam Administration Takes New Steps to Fight Climate Change, Ocean Acidification (Sept. 12, 2018), *available at* <https://www.governor.virginia.gov/newsroom/all-releases/2018/september/headline-829610-en.html>.

<sup>13</sup> *Id.*

<sup>14</sup> See Draft Permit at 7-9.

***Communities, It Must Reject the Draft Permit in Order to Act Consistently With the Commonwealth Energy Policy***

Finally, it is the policy of the Commonwealth to “[e]nsure that development of new, or expansion of existing, energy resources or facilities does not have a disproportionate adverse impact on economically disadvantaged or minority communities.”<sup>15</sup> According to a study conducted by anthropologist Dr. Lakshmi Fjord, the community within a 1.1 mile radius of this proposed compressor station is an environmental justice community where over 85% of households are African-American, 33% are descendants of Freedmen, and the numbers of elderly (70+) and the very young (0-6) are disproportionately higher than other age groups.<sup>16</sup>

In taking any discretionary action, such as the decision to approve or reject ACP’s application for a stationary source permit to construct and operate the Buckingham County compressor station, the Department “shall recognize the elements of the Commonwealth Energy Policy and where appropriate, shall act in a manner consistent therewith.”<sup>17</sup> This includes the aforementioned requirement to ensure that new energy resources or facilities do not have a disproportionate adverse impact on economically disadvantaged or minority communities.

If this compressor station receives a permit from the Department and is constructed, its operation will undoubtedly subject an economically disadvantaged and minority community to higher levels of air pollution than experienced by other Virginia citizens, even if ambient air quality standards are still attained statewide. If the Department cannot demonstrate that the Buckingham Compressor Station will not have a disproportionate adverse impact on an environmental justice community, the Department and Board must reject the Draft Permit in order to act in a matter consistent with the Commonwealth Energy Policy.”

While the Commonwealth Energy Policy “shall not be construed to amend, repeal, or override any contrary provision of applicable law,” it is not inconsistent with the state air pollution control laws for the Department and Board to recognize the Commonwealth Energy Policy here (specifically its environmental justice policy under subsection (A)(11)). While the Department and Board may have little or no authority on siting decisions, they have full authority to issue, amend, revoke, terminate, and reissue permits to control the emission of air pollutants in the Commonwealth.<sup>18</sup> In this case, the Department and Board should use their full authority under the state air pollution laws and the Commonwealth Energy Policy to reject the application for Stationary Source Permit to Construct and Operate the Buckingham County Compressor Station.

Alternatively, if there is evidence showing that rejecting the Draft Permit under the Commonwealth Energy Policy subsection (A)(11) is inconsistent with applicable law, the Department and the Board should incorporate into the Draft Permit’s conditions the comments outlined above.

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<sup>15</sup> VA Code § 67-102 (A)(11).

<sup>16</sup> Lakshmi Fjord, Report to the Permanent Peoples’ Tribunal Session on Human Rights, Fracking and Climate Change 63 (2018), available at <https://www.tribunalonfracking.org/wp-content/uploads/2018/04/Cvllle-Peoples-Trib-Summary-Report.pdf>.

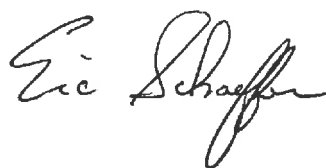
<sup>17</sup> VA Code § 67-102 (C).

<sup>18</sup> VA Code § 10.1-1322.

Thank you for the opportunity to comment on this important matter.



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## SoLoNOx Products: Emissions in Non-SoLoNOx Modes

Leslie Witherspoon  
Solar Turbines Incorporated

### PURPOSE

Solar's gas turbine dry low NOx emissions combustion systems, known as *SoLoNOx*<sup>™</sup>, have been developed to provide the lowest emissions possible during normal operating conditions. In order to optimize the performance of the turbine, the combustion and fuel systems are designed to reduce NOx, CO and unburned hydrocarbons (UHC) without penalizing stability or transient capabilities. At very low load and cold temperature extremes, the *SoLoNOx* system must be controlled differently in order to assure stable operation. The required adjustments to the turbine controls at these conditions cause emissions to increase.

The purpose of this Product Information Letter is to provide emissions estimates, and in some cases warrantable emissions for NOx, CO and UHC, at off-design conditions.

Historically, regulatory agencies have not required a specific emissions level to be met at low load or cold ambient operating conditions, but have asked what emissions levels are expected. The expected values are necessary to appropriately estimate emissions for annual emissions inventory purposes and for New Source Review applicability determinations and permitting.

### COLD AMBIENT EMISSIONS ESTIMATES

Solar's standard temperature range warranty for gas turbines with *SoLoNOx* combustion is  $\geq 0^{\circ}\text{F}$  ( $-20^{\circ}\text{C}$ ). The *Titan*<sup>™</sup> 250 is an exception, with a lower standard warranty at  $\geq -20^{\circ}\text{F}$  ( $-29^{\circ}\text{C}$ ). At ambient temperatures below  $0^{\circ}\text{F}$ , many of Solar's turbine engine models are controlled to increase pilot fuel to improve flame stability and emissions are higher. Without the increase in pilot fuel at temperatures below  $0^{\circ}\text{F}$  the engines may exhibit combustor rumble, as operation may be near the lean stability limit.

If a cold ambient emissions warranty is requested, a new production turbine configured with the latest combustion hardware is required. For most models this refers to the inclusion of Cold Ambient Fuel Control Logic.

Emissions warranties are not offered for ambient temperatures below  $-20^{\circ}\text{F}$  ( $-29^{\circ}\text{C}$ ). In addition, cold ambient emissions warranties cannot be offered for the *Centaur*<sup>®</sup> 40 turbine.

Table 1 provides expected and warrantable (upon Solar's documented approval) emissions levels for Solar's *SoLoNOx* combustion turbines. All emissions levels are in ppm at 15% O<sub>2</sub>. Refer to Product Information Letter 205 for *Mercury*<sup>™</sup> 50 turbine emissions estimates.

For information on the availability and approvals for cold ambient temperature emissions warranties, please contact Solar's sales representatives.

Table 2 summarizes "expected" emissions levels for ambient temperatures below 0°F (–20°C) for Solar's *SoLoNOx* turbines that do not have current production hardware or for new production hardware that is not equipped with the cold ambient fuel control logic. The emissions levels are extrapolated from San Diego factory tests and may vary at extreme temperatures and as a result of variations in other parameters, such as fuel composition, fuel quality, etc.

For more conservative NOx emissions estimate for new equipment, customers can refer to the New Source Performance Standard (NSPS) 40CFR60, subpart KKKK, where the allowable NOx emissions level for ambient temperatures < 0°F (–20°F) is 150 ppm NOx at 15% O<sub>2</sub>. For pre-February 18, 2005, *SoLoNOx* combustion turbines subject to 40CFR60 subpart GG, a conservative estimate is the appropriate subpart GG emissions level. Subpart GG levels range from 150 to 214 ppm NOx at 15% O<sub>2</sub> depending on the turbine model.

Table 3 summarizes emissions levels for ambient temperatures below –20°F (–29°C) for the *Titan 250*.

**Table 1. Warrantable Emissions Between 0°F and –20°F (–20° to –29°C) for New Production**

Turbine Model	Fuel System	Fuel	Applicable Load	NOx, ppm	CO, ppm	UHC, ppm
<i>Centaur 50</i>	Gas Only	Gas	50 to 100% load	42	100	50
	Dual Fuel	Gas	50 to 100% load	72	100	50
<i>Taurus™ 60</i>	Gas Only or Dual Fuel	Gas	50 to 100% load	42	100	50
<i>Taurus 65</i>	Gas Only	Gas	50 to 100% load	42	100	50
<i>Taurus 70</i>	Gas Only or Dual Fuel	Gas	50 to 100% load	42	100	50
<i>Mars® 90</i>	Gas Only	Gas	50 to 100% load	42	100	50
<i>Mars 100</i>	Gas Only or Dual Fuel	Gas	50 to 100% load	42	100	50
<i>Titan 130</i>	Gas Only or Dual Fuel	Gas	50 to 100% load	42	100	50
<i>Titan 250</i>	Gas Only	Gas	40 to 100% load	25	50	25
	Gas Only	Gas	40 to 100% load	15	25	25
<i>Centaur 50</i>	Dual Fuel	Liquid	65 to 100% load	120	150	75
<i>Taurus 60</i>	Dual Fuel	Liquid	65 to 100% load	120	150	75
<i>Taurus 70</i>	Dual Fuel	Liquid	65 to 100% load	120	150	75
<i>Mars 100</i>	Dual Fuel	Liquid	65 to 100% load	120	150	75
<i>Titan 130</i>	Dual Fuel	Liquid	65 to 100% load	120	150	75



**Table 2. Expected Emissions below 0°F (–20°C) for SoLoNOx Combustion Turbines**

Turbine Model	Fuel System	Fuel	Applicable Load	NOx, ppm	CO, ppm	UHC, ppm
<i>Centaur 40</i>	Gas Only or Dual Fuel	Gas	80 to 100% load	120	150	50
<i>Centaur 50</i>	Gas Only	Gas	50 to 100% load	120	150	50
	Dual Fuel	Gas	50 to 100% load	120	150	50
<i>Taurus 60</i>	Gas Only or Dual Fuel	Gas	50 to 100% load	120	150	50
<i>Taurus 65</i>	Gas Only	Gas	50 to 100% load	120	150	50
<i>Taurus 70</i>	Gas Only or Dual Fuel	Gas	50 to 100% load	120	150	50
<i>Mars 90</i>	Gas Only	Gas	80 to 100% load	120	150	50
<i>Mars 100</i>	Gas Only or Dual Fuel	Gas	50 to 100% load	120	150	50
<i>Titan 130</i>	Gas Only or Dual Fuel	Gas	50 to 100% load	120	150	50
<i>Centaur 40</i>	Dual Fuel	Liquid	80 to 100% load	120	150	75
<i>Centaur 50</i>	Dual Fuel	Liquid	65 to 100% load	120	150	75
<i>Taurus 60</i>	Dual Fuel	Liquid	65 to 100% load	120	150	75
<i>Taurus 70</i>	Dual Fuel	Liquid	65 to 100% load	120	150	75
<i>Mars 100</i>	Dual Fuel	Liquid	65 to 100% load	120	150	75
<i>Titan 130</i>	Dual Fuel	Liquid	65 to 100% load	120	150	75

**Table 3. Expected Emissions below –20°F (–29°C) for the Titan 250 SoLoNOx Combustion Turbine**

Turbine Model	Fuel System	Fuel	Applicable Load	NOx, ppm	CO, ppm	UHC, ppm
<i>Titan 250</i>	Gas Only	Gas	40 to 100% load	70	150	50

**COLD AMBIENT PERMITTING STRATEGY**

There are several permitting options to consider when permitting in cold ambient climates. Customers can use a tiered permitting approach or choose to permit a single emission rate over all temperatures. Historically, most construction and operating permits were silent on the ambient temperature boundaries for SoLoNOx operation.

Some customers have used a tiered permitting strategy. For purposes of compliance and annual emissions inventories, a digital thermometer is installed to record ambient temperature. The amount of time is recorded that the ambient temperature falls below 0°F. The amount of time below 0°F is then used with the emissions estimates shown in Tables 1 and 2 to estimate “actual” emissions during sub-zero operation.

A conservative alternative to using the NOx values in Tables 1, 2 and 3 is to reference 40CFR60 subpart KKKK, which allows 150 ppm NOx at 15% O<sub>2</sub> for sub-zero operation.

For customers who wish to permit at a single emission rate over all ambient temperatures, inlet air heating can be used to raise the engine inlet air temperature (T<sub>1</sub>) above 0°F. With inlet air heating to keep T<sub>1</sub> above 0°F, standard emission warranty levels may be offered.

Inlet air heating technology options include an electric resistance heater, an inlet air to exhaust heat exchanger and a glycol heat exchanger.

If an emissions warranty is desired and ambient temperatures are commonly below –20°F (–29°C), inlet air heating can be used to raise the turbine inlet temperature (T<sub>1</sub>) to at least –20°F. In such cases, the values shown in Table 1 can be warranted for new production.

**EMISSIONS ESTIMATES IN NON-SOLONOX MODE (LOW LOAD)**

At operating loads < 50% (<40% load for the *Titan 250*) on natural gas fuel and < 65% (< 80% load for *Centaur 40*) on liquid fuels, *SoLoNOx* engines are controlled to increase stability and transient response capability. The control steps that are required affect emissions in two ways: 1) pilot fuel flow is increased, increasing NOx emissions, and 2) airflow through the combustor is increased, increasing CO emissions. Note that the load levels are approximate. Engine controls are triggered either by power output for single-shaft engines or gas producer speed for two-shaft engines.

A conservative method for estimating emissions of NOx at low loads is to use the applicable NSPS: 40CFR60 subpart GG or KKKK. For projects that commence construction after February 18, 2005, subpart KKKK is the applicable NSPS and contains a NOx level of 150 ppm @ 15% O<sub>2</sub> for operating loads less than 75%.

Table 4 provides estimates of NOx, CO, and UHC emissions when operating in non-*SoLoNOx* mode for natural gas or liquid fuel. The estimated emissions can be assumed to vary linearly as load is decreased from just below 50% load for natural gas (or 65% load for liquid fuel) to idle.

The estimates in Table 4 apply for any product for gas only or dual fuel systems using pipeline quality natural gas. Refer to Product Information Letter 205 for *Mercury 50* emissions estimates.

**Table 4. Estimated Emissions in non-*SoLoNOx* Mode**

Ambient	Fuel System	Engine Load	NOx, ppm	CO, ppm	UHC, ppm
Centaur 40/50, Taurus 60/65/70, Mars 90/100, Titan 130					
≥ -20°F (-29°C)	Natural Gas	Less than 50%	70	8,000	800
		Idle	50	10,000	1,000
< -20°F (-29°C)	Natural Gas	Less than 50%	120	8,000	800
		Idle	120	10,000	1,000
Titan 250					
≥ -20°F (-29°C)	Natural Gas	Less than 40%	50	25	20
		Idle	50	2,000	200
< -20°F (-29°C)	Natural Gas	Less than 40%	70	150	50
		Idle	70	2,000	200
Centaur 50, Taurus 60/70, Mars 100, Titan 130					
≥ -20°F (-29°C)	Liquid	Less than 65%	120	1,000	100
		Idle	120	10,000	3,000
< -20°F (-29°C)	Liquid	Less than 65%	120	1,000	150
		Idle	120	10,000	3,000
Centaur 40					
≥ -20°F (-29°C)	Liquid	Less than 80%	120	1,000	100
		Idle	120	10,000	3,000
< -20°F (-29°C)	Liquid	Less than 80%	120	1,000	150
		Idle	120	10,000	3,000

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## Volatile Organic Compound, Sulfur Dioxide, and Formaldehyde Emission Estimates

Leslie Witherspoon  
Solar Turbines Incorporated

### PURPOSE

This Product Information Letter summarizes methods that are available to estimate emissions of volatile organic compounds (VOC), sulfur dioxide (SO<sub>2</sub>), and formaldehyde from gas turbines. Emissions estimates of these pollutants are often necessary during the air permitting process.

### INTRODUCTION

In absence of site-specific or representative source test data, Solar refers customers to a United States Environmental Protection Agency (EPA) document titled "AP-42" or other appropriate EPA reference documents. AP-42 is a collection of emission factors for different emission sources. The emission factors found in AP-42 provide a generally accepted way of estimating emissions when more representative data are not available. The most recent version of AP-42 (dated April 2000) can be found at:

<http://www.epa.gov/ttn/chief/ap42/ch03/index.html>

Solar does not typically warranty the emission rates for VOC, SO<sub>2</sub> or formaldehyde.

### Volatile Organic Compounds

Many permitting agencies require gas turbine users to estimate emissions of VOC, a subpart of the unburned hydrocarbon (UHC) emissions, during the air permitting process. Volatile organic compounds, non-methane hydrocarbons (NMHC), and reactive organic gases (ROG) are some of the many ways of referring to the non-methane (and non-ethane) portion of an "unburned hydrocarbon" emission estimate.

For natural gas fuel, Solar's customers use 10-20% of the UHC emission rate to represent VOC

emissions. The estimate of 10-20% is based on a ratio of total non-methane hydrocarbons to total organic compounds. The use of 10-20% provides a conservative estimate of VOC emissions. The balance of the UHC is assumed to be primarily methane.

For liquid fuel, it is appropriate to estimate that 100% of the UHC emission estimate is VOC.

### Sulfur Dioxide

Sulfur dioxide emissions are produced by conversion of sulfur in the fuel to SO<sub>2</sub>. Since Solar does not control the amount of sulfur in the fuel, we are unable to predict SO<sub>2</sub> emissions without a site fuel composition analysis. Customers generally estimate SO<sub>2</sub> emissions with a mass balance calculation by assuming that any sulfur in the fuel will convert to SO<sub>2</sub>. For reference, the typical mass balance equation is shown below.

Variables: wt % of sulfur in fuel  
Btu/lb fuel (LHV\*)  
MMBtu/hr fuel flow (LHV)

$$\frac{\text{lb SO}_2}{\text{hr}} = \left( \frac{\text{wt\% Sulfur}}{100} \right) \left( \frac{\text{lb fuel}}{\text{Btu}} \right) \left( \frac{10^6 \text{ Btu}}{\text{MMBtu}} \right) \left( \frac{\text{MMBtu fuel}}{\text{hr}} \right) \left( \frac{\text{MW SO}_2}{\text{MW Sulfur}} \right)$$

As an alternative to the mass balance calculation, EPA's AP-42 document can be used. AP-42 (Table 3.1-2a, April 2000) suggests emission factors of 0.0034 lb/MMBtu for gas fuel (HHV\*) and 0.033 lb/MMBtu for liquid fuel (HHV).

\*LHV = Lower Heating Value; HHV = Higher Heating Value

### Formaldehyde

In gas turbines, formaldehyde emissions are a result of incomplete combustion. Formaldehyde

in the exhaust stream is unstable and very difficult to measure. In addition to turbine characteristics including combustor design, size, maintenance history, and load profile, the formaldehyde emission level is also affected by:

- Ambient temperature
- Humidity
- Atmospheric pressure
- Fuel quality
- Formaldehyde concentration in the ambient air
- Test method measurement variability
- Operational factors

The emission factor data in Table 1 is an excerpt from an EPA memo: "Revised HAP Emission

Factors for Stationary Combustion Turbines, 8/22/03." The memo presents hazardous air pollutant (HAP) emission factor data in several categories including: mean, median, maximum, and minimum. The emission factors in the memo are a compilation of the HAP data EPA collected during the Maximum Achievable Control Technology (MACT) standard development process. The emission factor documentation shows there is a high degree of variability in formaldehyde emissions from gas turbines, depending on the manufacturer, rating size of equipment, combustor design, and testing events. To estimate formaldehyde emissions from gas turbines, users should use the emission factor(s) that best represent the gas turbines actual / planned operating profile. Refer to the memo for alternative emission factors.

**Table 1. EPA's Total HAP and Formaldehyde Emission Factors for <50 MW Lean-Premix Gas Turbines burning Natural Gas**

(Source: Revised HAP Emission Factors for Stationary Combustion Turbines, OAR-2002-0060, IV-B-09, 8/22/03)

Pollutant	Engine Load	95% Upper Confidence of Mean, lb/MMBtu HHV	95% Upper Confidence of Data, lb/MMBtu HHV	Memo Reference
Total HAP	> 90%	0.00144	0.00258	Table 19
Total HAP	All	0.00160	0.00305	Table 16
Formaldehyde	> 90%	0.00127	0.00241	Table 19
Formaldehyde	All	0.00143	0.00288	Table 16

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## Emission Estimates at Start-up, Shutdown, and Commissioning for SoLoNOx Combustion Products

**Leslie Witherspoon**  
Solar Turbines Incorporated

### PURPOSE

The purpose of this Product Information Letter (PIL) is to provide emission estimates for start-up and shutdown events for *Solar*® gas turbines with *SoLoNOx*™ dry low emissions combustion systems. The commissioning process is also discussed.

### INTRODUCTION

The information presented in this document is representative for both generator set (GS) and compressor set/mechanical drive (CS/MD) combustion turbine applications. Operation of duct burners and/or any add-on control equipment is not accounted for in the emissions estimates. Emissions related to the start-up, shutdown, and commissioning of combustion turbines will not be guaranteed or warranted.

Combustion turbine start-up occurs in one of three modes: cold, warm, or hot. On large, utility size, combustion turbines, the start-up time varies by the "mode". The start-up duration for a hot, warm, or cold *Solar* turbine is less than 10 minutes in simple-cycle and most combined heat and power applications.

Heat recovery steam generator (HRSG) steam pressure is usually 250 psig or less. At 250 psig or less, thermal stress within the HRSG is minimized and, therefore, firing ramp-up is not limited. However, some combined heat and power plant applications will desire or dictate longer start-up times, therefore emissions assuming a 60-minute start are also estimated.

A typical shutdown for a *Solar* turbine is <10 minutes. Emissions estimates for an elongated shutdown, 30-minutes, are also included.

Start-up and shutdown emissions estimates for the *Mercury*™ 50 engine are found in PIL 205.

For start-up and shutdown emissions estimates for conventional combustion turbines, landfill gas, digester gas, or other alternative fuel applications, contact Solar's Environmental Programs Department.

### START-UP SEQUENCE

The start-up sequence, or getting to *SoLoNOx* combustion mode, takes three steps:

1. Purge-crank
2. Ignition and acceleration to idle
3. Loading / thermal stabilization

During the "purge-crank" step, rotation of the turbine shaft is accomplished with a starter motor to remove any residual fuel gas in the engine flow path and exhaust. During "igni-

tion and acceleration to idle," fuel is introduced into the combustor and ignited in a diffusion flame mode and the engine rotor is accelerated to idle speed.

The third step consists of applying up to 50% load<sup>1</sup> while allowing the combustion flame to transition and stabilize. Once 50% load is achieved, the turbine transitions to SoLoNOx combustion mode and the engine control system begins to hold the combustion primary zone temperature and limit pilot fuel to achieve the targeted nitrogen oxides (NOx), carbon monoxide (CO), and unburned hydrocarbons (UHC) emission levels.

Steps 2 and 3 are short-term transient conditions making up less than 10 minutes.

### SHUTDOWN PROCESS

Normal, planned cool down/shutdown duration varies by engine model. The *Centaur*<sup>®</sup> 40, *Centaur* 50, *Taurus*<sup>™</sup> 60, and *Taurus* 65 engines take about 5 minutes. The *Taurus* 70, *Mars*<sup>®</sup> 90 and 100, *Titan*<sup>™</sup> 130 and *Titan* 250 engines take about 10 minutes. Typically, once the shutdown process starts, the emissions will remain in SoLoNOx mode for approximately 90 seconds and move into a transitional mode for the balance of the estimated shutdown time (assuming the unit was operating at full-load).

### START-UP AND SHUTDOWN EMISSIONS ESTIMATES

Tables 1 through 5 summarize the estimated pounds of emissions per start-up and shutdown event for each product. Emissions estimates are presented for both GS and CS/MD applications on both natural gas and liquid fuel (diesel #2). The emissions estimates are calculated using empirical exhaust characteristics.

### COMMISSIONING EMISSIONS

Commissioning generally takes place over a two-week period. Static testing, where no combustion occurs, usually requires one week and no emissions are expected. Dynamic testing, where combustion will occur, will see the engine start and shutdown a number of times and a variety of loads will be placed on the system. It is impossible to predict how long the turbine will run and in what combustion / emissions mode it will be running. The dynamic testing period is generally followed by one to two days of "tune-up" during which the turbine is running at various loads, most likely within low emissions mode (warranted emissions range).

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<sup>1</sup> 40% load for the *Titan* 250 engine on natural gas. 65% load for all engines on liquid fuel (except 80% load for the *Centaur* 40).

**Table 1. Estimation of Start-up and Shutdown Emissions (lbs/event) for SoLoNOx Generator Set Applications**  
**10 Minute Start-up and 10 Minute Shutdown**  
**Natural Gas Fuel**

Data will NOT be warranted under any circumstances

	Centaur 40 4701S				Centaur 50 6201S				Taurus 60 7901S				Taurus 65 8401S			
	NOx	CO	UHC	CO2	NOx	CO	UHC	CO2	NOx	CO	UHC	CO2	NOx	CO	UHC	CO2
	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)
Total Emissions per Start (lbs)	0.6	58.1	3.3	359	0.8	75.0	4.3	454	0.8	78.5	4.5	482	0.9	85.8	4.9	523
Total Emissions per Shutdown (lbs)	0.3	25.5	1.5	160	0.4	31.1	1.8	194	0.4	34.7	2.0	217	0.4	38.2	2.2	237

	Taurus 70 10801S				Mars 90 13002S GSC				Mars 100 16002S GSC				Titan 130 20501S				Titan 250 30002S			
	NOx	CO	UHC	CO2	NOx	CO	UHC	CO2	NOx	CO	UHC	CO2	NOx	CO	UHC	CO2	NOx	CO	UHC	CO2
	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)
Total Emissions per Start (lbs)	1.1	103.9	5.9	634	1.4	129.0	7.4	868	1.6	151.2	8.6	952	2.1	195.6	11.2	1,194	2.5	22.7	1.5	1,925
Total Emissions per Shutdown (lbs)	1.3	110.7	6.3	689	1.7	147.9	8.4	912	1.9	166.8	9.5	1,026	2.4	210.0	12.0	1,303	3.0	19.9	1.5	1,993

Assumes ISO conditions: 59F, 60% RH, sea level, no losses

Assumes unit is operating at full load prior to shutdown.

Assumes natural gas fuel; ES 9-98 compliant.

**Table 2. Estimation of Start-up and Shutdown Emissions (lbs/event) for SoLoNOx Generator Set Applications**  
**60 Minute Start-up and 30 Minute Shutdown**  
**Natural Gas Fuel**

Data will NOT be warranted under any circumstances

	Centaur 40 4701S				Centaur 50 6201S				Taurus 60 7901S				Taurus 65 8401S			
	NOx (lbs)	CO (lbs)	UHC (lbs)	CO2 (lbs)	NOx (lbs)	CO (lbs)	UHC (lbs)	CO2 (lbs)	NOx (lbs)	CO (lbs)	UHC (lbs)	CO2 (lbs)	NOx (lbs)	CO (lbs)	UHC (lbs)	CO2 (lbs)
Total Emissions per Start (lbs)	4.1	219.4	13.0	3,420	5.0	272.4	16.1	4,219	5.7	299.8	17.8	4,780	6.1	326.5	19.3	5,074
Total Emissions per Shutdown (lbs)	1.8	121.1	7.1	1,442	2.3	163.3	9.5	1,834	2.5	163.5	9.6	1,994	2.6	177.2	10.4	2,119

	Taurus 70 10801S				Mars 90 13002S				Mars 100 16002S				Titan 130 20501S				Titan 250 30002S			
	NOx (lbs)	CO (lbs)	UHC (lbs)	CO2 (lbs)	NOx (lbs)	CO (lbs)	UHC (lbs)	CO2 (lbs)	NOx (lbs)	CO (lbs)	UHC (lbs)	CO2 (lbs)	NOx (lbs)	CO (lbs)	UHC (lbs)	CO2 (lbs)	NOx (lbs)	CO (lbs)	UHC (lbs)	CO2 (lbs)
Total Emissions per Start (lbs)	7.6	410.3	24.2	6,164	10.5	570.8	33.7	8,641	11.3	583.5	34.6	9,691	13.8	740.4	43.8	11,495	14.6	75.5	7.3	16,253
Total Emissions per Shutdown (lbs)	3.3	223.0	13.0	2,588	4.3	277.0	16.2	3,685	4.8	308.1	18.0	4,056	6.0	405.3	23.7	4,826	6.2	52.6	4.1	7,222

Assumes ISO conditions: 59F, 60% RH, sea level, no losses.

Assumes unit is operating at full load prior to shutdown.

Assumes natural gas fuel; ES 9-98 compliant.



**Table 3. Estimation of Start-up and Shutdown Emissions (lbs/event) for SoLoNOx CS/MD Applications**  
**10 Minute Start-up and 10 Minute Shutdown**  
**Natural Gas Fuel**

**Data will NOT be warranted under any circumstances**

	Centaur 40 4702S				Centaur 50 6102S				Taurus 60 7802S			
	NOx (lbs)	CO (lbs)	UHC (lbs)	CO2 (lbs)	NOx (lbs)	CO (lbs)	UHC (lbs)	CO2 (lbs)	NOx (lbs)	CO (lbs)	UHC (lbs)	CO2 (lbs)
Total Emissions per Start (lbs)	0.7	64.4	3.7	392	0.8	69.1	4.0	469	0.7	64.3	3.7	410
Total Emissions per Shutdown (lbs)	0.3	30.2	1.7	181	0.4	35.4	2.0	217	0.4	33.0	1.9	204

	Taurus 70 10302S				Mars 90 13002S CSMD				Mars 100 16002S CSMD				Titan 130 20502S				Titan 250 30002S			
	NOx (lbs)	CO (lbs)	UHC (lbs)	CO2 (lbs)	NOx (lbs)	CO (lbs)	UHC (lbs)	CO2 (lbs)	NOx (lbs)	CO (lbs)	UHC (lbs)	CO2 (lbs)	NOx (lbs)	CO (lbs)	UHC (lbs)	CO2 (lbs)	NOx (lbs)	CO (lbs)	UHC (lbs)	CO2 (lbs)
Total Emissions per Start (lbs)	0.8	73.1	4.2	519	1.2	109.3	6.2	805	1.4	123.5	7.1	829	1.9	176.9	10.1	1,161	2.6	26.2	1.7	1,794
Total Emissions per Shutdown (lbs)	1.1	93.4	5.3	575	1.5	132.6	7.6	817	1.7	149.2	8.5	920	2.4	207.6	11.9	1,272	2.9	19.1	1.4	1,918

Assumes ISO conditions: 59F, 60% RH, sea level, no losses.

Assumes unit is operating at full load prior to shutdown.

Assumes natural gas fuel; ES 9-98 compliant.

**Table 4. Estimation of Start-up and Shutdown Emissions (lbs/event) for SoLoNOx Generator Set**  
**10 Minute Start-up and 10 Minute Shutdown**  
**Liquid Fuel (Diesel #2)**

Data will NOT be warranted under any circumstances

	Centaur 40 4701S				Centaur 50 6201S				Taurus 60 7901S			
	NOx	CO	UHC	CO2	NOx	CO	UHC	CO2	NOx	CO	UHC	CO2
	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)
<b>Total Emissions per Start (lbs)</b>	1.3	44.5	7.4	473	1.7	59.0	9.8	601	1.7	59.8	9.9	636

<b>Total Emissions per Shutdown (lbs)</b>	0.6	17.3	2.8	211	0.7	21.2	3.4	256	0.8	23.5	3.8	286
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	Taurus 70 10801S				Mars 100 16002S GSC				Titan 130 20501S			
	NOx	CO	UHC	CO2	NOx	CO	UHC	CO2	NOx	CO	UHC	CO2
	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)
<b>Total Emissions per Start (lbs)</b>	2.3	78.5	13.0	823	3.4	114.1	18.8	1,239	4.3	147.5	24.4	1,547

<b>Total Emissions per Shutdown (lbs)</b>	2.5	73.6	12.0	889	3.8	111.4	18.1	1,331	4.7	139.1	22.6	1,677
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Assumes ISO conditions: 59F, 60% RH, sea level, no losses.

Assumes unit is operating at full load prior to shutdown.

Assumes #2 Diesel fuel; ES 9-98 compliant.

**Table 5. Estimation of Start-up and Shutdown Emissions (lbs/event) for SoLoNOx Generator Set**  
**60 Minute Start-up and 30 Minute Shutdown**  
**Liquid Fuel (Diesel #2)**

Data will NOT be warranted under any circumstances

	Centaur 40 4701S				Centaur 50 6201S				Taurus 60 7901S			
	NOx	CO	UHC	CO2	NOx	CO	UHC	CO2	NOx	CO	UHC	CO2
	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)
Total Emissions per Start (lbs)	11.7	194.7	30.9	4,255	15.2	271.9	43.3	5,302	14.7	282.6	45.0	5,962
Total Emissions per Shutdown (lbs)	4.4	84.7	13.6	1,816	6.7	164.3	27.0	2,334	6.3	159.0	26.0	2,515

	Taurus 70 10801S				Mars 100 16002S				Titan 130 20501S			
	NOx	CO	UHC	CO2	NOx	CO	UHC	CO2	NOx	CO	UHC	CO2
	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)
Total Emissions per Start (lbs)	18.4	360.3	57.4	7,375	29.1	552.0	87.7	11,685	34.4	677.0	108.0	13,731
Total Emissions per Shutdown (lbs)	8.0	207.8	34.1	3,156	12.3	302.6	49.4	4,970	15.0	388.5	63.7	5,876

Assumes ISO conditions: 59F, 60% RH, sea level, no losses.

Assumes unit is operating at full load prior to shutdown.

Assumes #2 Diesel fuel; ES 9-98 compliant.



Air Division 1, rr &lt;airdivision1@deq.virginia.gov&gt;

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**ACP Buckingham Compressor Station - Comments to Draft Permit**

1 message

**Thomas R Andrade** <Thomas.R.Andrade@dominionenergy.com>

Mon, Sep 10, 2018 at 2:42 PM

To: "Corbett, Patrick" &lt;Patrick.Corbett@deq.virginia.gov&gt;

Cc: Cheryl Mayo &lt;cheryl.mayo@deq.virginia.gov&gt;, "airdivision1@deq.virginia.gov" &lt;airdivision1@deq.virginia.gov&gt;, Richard B Gangle &lt;richard.b.gangle@dominionenergy.com&gt;, Elizabeth H Gayne &lt;Elizabeth.H.Gayne@dominionenergy.com&gt;

Mr. Corbett

Attached is a copy of Atlantic Coast Pipeline, L.L.C.'s (ACP) comments to the draft Stationary Source Permit to Construct and Operate (Registration No.: 21599) for the proposed Buckingham Compressor Station located in Buckingham County, Virginia. We appreciate the opportunity to provide comments on this draft air permit. If you have questions about this submittal, please do not hesitate to contact me.

Thanks!!!

**T.R. Andrade**

Environmental Consultant

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DEES – Corporate Air Programs

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**ACP\_Buckingham Compressor Station\_Comments to Draft Air Permit\_2018-09-10.pdf**

1696K



September 10, 2018

**BY: ELECTRONIC MAIL AND OVERNIGHT MAIL**

Mr. Patrick Corbett  
Central Office  
Virginia Department of Environmental Quality  
1111 East Main St., Suite 1400  
Richmond, VA 23219

Subject: Atlantic Coast Pipeline, L.L.C.  
Buckingham Compressor Station  
Draft Stationary Source Permit to Construct and Operate  
Registration Number 21599

Dear Mr. Corbett:

Atlantic Coast Pipeline, L.L.C. (ACP) is pleased to provide the Virginia Department of Environmental Quality (VDEQ) with our comments on the draft Stationary Source Permit to Construct and Operate (draft air permit) for the proposed Buckingham Compressor Station located in Buckingham County, Virginia. The following is a summary of the requested changes to the conditions presented in the draft air permit.

**Condition 4.h, Page 7, Condition 8, Page 9, & Condition 35.c, Page 17:** Presented in these conditions is the reference to “minimum pilot mode”, which is an indicator that the Solar gas turbines are operating in a lean premixed combustion mode and is synonymous with the SoLoNOx control system equipped on each of the Solar gas turbines correlating to the lowest operating emissions levels. Operational indicators for 'minimum pilot mode', SoLoNOx mode, and Non-SoLoNOx mode are included within each unit's operating system. The emission rates provided within this permit and as provided by the vendor guarantee are based on the Solar gas turbine operating in SoLoNOx or Non-SoLoNOx mode. As previously provided and indicated in this draft air permit, each of the Solar gas turbines will operate in SoLoNOx mode at all times, except during startup, shutdown and when inlet air temperature is less than below 0°F (Non-SoLoNOx mode). Since the emission rates for the Solar gas turbines are based on SoLoNOx or Non-SoLoNOx mode, ACP requests that the reference to “minimum pilot mode” in Conditions 4.h, 8, and 35.c be replaced with “SoLoNOx mode” which is the appropriate indicator to demonstrate compliance with the emission rates provided within this permit and the vendor guaranteed emission rates. This would also be consistent with other conditions contained in our operating permits including those within Virginia.

**Conditions 20-23, Page 11-14:** The hourly and annual emission limits for particulate matter (PM) associated with each compressor turbine are intended to reflect filterable PM. Since the draft permit as written is not clear that the term "PM" refers to filterable PM, ACP suggests a reference note be added to these conditions defining PM to be filterable PM.

**Conditions 36.b, Page 17:** Condition 36 requires the submittal of a certification of compliance with all the terms and conditions of this permit. As part of this certification, Condition 36.b requires reporting of any excursions from control device operating parameter requirements, as documented by continuous emission monitoring. ACP understands that this requirement references the various parametric monitoring requirements of the control systems employed at the station. Therefore, ACP suggests the following changes to this condition for clarity:

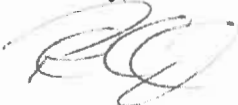
36.b Excursions from control device operating parameter requirements, as documented by continuous ~~emission~~ parametric monitoring; and

**Conditions 47, Page 21:** The last sentence of Condition 47, regarding compliance with the formaldehyde emission limits, states "Compliance with these emission limits may be determined as stated in Conditions 2, 4, 5, 7, 17, 49, 50, and 51". ACP requests the reference to Condition 7 be removed since formaldehyde is not present in natural gas. See the suggest change to this condition as presented below:

47. "...Annual emissions shall be calculated monthly as the sum of each consecutive 12-month period. These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits may be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Conditions 2, 4, 5, ~~7~~, 17, 49, 50, and 51."

We appreciate the opportunity to provide comments on this draft air permit. If you have questions about this submittal, please do not hesitate to contact T.R. Andrade at (804) 273-2882 or at Thomas.R.Andrade@dominionenergy.com.

Sincerely,



Richard Gangle  
Director, Environmental Services

RG/tra

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Air Division 1, rr &lt;airdivision1@deq.virginia.gov&gt;

## Atlantic Coast Pipeline: Air Permit comment period for proposed Buckingham Compressor Station

1 message

108newyork@gmail.com <108newyork@gmail.com>  
To: airdivision1@deq.virginia.gov

Tue, Aug 14, 2018 at 1:18 AM

To the Air Division of the DEQ:

I live in Buckingham, Virginia (23921), about 5 miles from the proposed compressor station as part of the ACP plan.

I'm deeply concerned about the ACP in general, and the compressor very specifically and how it may impact my quality of life, health, and also my job.

I moved to Buckingham in 1980 specifically because I wanted to be in as pollution and pollutant free environment as possible. I lived most of my life prior in New Jersey, with its many chemical plants. I watched those around me become ill, die of cancer and other serious diseases.

I also had a job opportunity to work at a newly forming religious/educational center in Buckingham and decided to take the job and to move there. The center is founded on wellbeing — in all its aspects and certainly health and wellness principles. My fear is that with the ACP/Compressor station, all the people who come to the center to take programs will no longer do so due to the health risks associated with this project.

I have researched the literature concerning the public health risks of pollutants associated with the compressor station. From nitrogen oxides to carbon monoxide to volatile compounds and over 30 air pollutants — I hope you will understand the grave cause for my concern!

I'm also deeply concerned for what seems to be racial overtones to the selection of the location for the compressor station. The Freedman community of Union Hill lies proximate to the only compressor station location in all of Virginia. Similarly, the only compressor station in North Carolina was sited in community that is predominately African American today on Native American land. Union Hill has not been given adequate information about ACP-associated infrastructure, nor has our center, 5 miles away. This polluting, dangerous (high pressure, explosive) infrastructure in Buckingham will not be staffed round the clock to assure safe management—the station will operate long-distance from West Virginia. There is significant explosion risk with gas from six pipelines channeled through Transco and ACP Pipelines at the Buckingham intersection. A blast zone extends a minimum of 2 miles with secondary fires likely for much larger distances. Air pollution from the compressor is estimated to spread approximately 10-15 miles!

If you think that we, in the Buckingham County community have some distrust for Dominion, you would be correct. Not only have they been less than forthcoming, they have downplayed our concerns, misled us, given us inaccurate information, etc. Dominion continues changing their story. This is the third major update to their original application in 2015. Due to incomplete information, there have been five additional requests for clarification in 2017 and 2018. In each instance, the Department of Environmental Quality (DEQ) appears to feed information to Dominion Energy and to project consultants so they get future wording and testing correct. Records suggest a close connection between DEQ, Environmental Resource Management (ERM) and Dominion Energy. Is the government protecting its citizens or Dominion?

I believe that before the air permit is approved (and other permits, including waterway, wetlands & land), that ACP-DEP should take our concerns seriously, realize they are reasonable, and that further analysis is needed to address our concerns that based on the reports we've been shown:

- Toxic formaldehyde and hexane levels remain too high.
- Baseline locations for comparison of air emissions are problematic (e.g., Hopewell, Harrisonburg, Richmond, Charlottesville, Roanoke, etc.). Documents argue they used the best available comparative location for each specific emission under analysis, but circumstances are dissimilar.
- The projected/estimated reductions of emissions come from manufacturers' estimations from lab studies and not from any existing compressor facility (i.e., these are "DESIGN VALUES" and "PERFORMANCE PREDICTIONS" only). Some of the NOx reduction technology seems to have only been used on small turbines.

- The technology proposed is unproven—the Union Hill community is being treated like guinea pigs without Dominion and ACP being clear in public statements that all claims of reductions are hypothetical and not based on actual operation or testing of equipment. There is very little evidence for proposed reductions outside of computerized air models, which have not been independently verified.
- While claiming use of Best Available Technology, there are emission reduction devices and procedures discussed in Dominion's Methane Management Report are NOT discussed in the air permit application
- In answers to requests for information, Dominion admits that they will pollute up to mandated limits (e.g., VOC emission limit of 2.7 tons annually). They suggest they will add expensive additional controls only if and when they approach annual limits. This shows that they have technology available to reduce more, but suggests they prefer to pollute because it is more profitable.
- If there is a leak of some sort at the compressor station, compressor station operators have 30 days to fix it. They could delay fixing it if they think the shutdown emissions would be greater than the leak.
- The size of the ammonia tank has increased over time from 8,000 gallons to 13,400 gallons.
- The air permit does not address the proximity of wetlands and other site impacts deemed irrelevant to an air permit but important when considering overall environmental impact. Will they be addressed in another way or another permit? What, if any, other regulatory processes remain?

I deeply and profoundly appreciate your consideration of my request and concerns that these matters be addressed prior to granting an air permit. Thank you.

Sincerely,

*Prem Anjali*

Reverend Prem Anjali  
263 Ananda Kutir Place  
Buckingham, VA 23921





Air Division 1, rr &lt;airdivision1@deq.virginia.gov&gt;

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**BCS air permit comments**

1 message

**Heidi** <heidi1008@gmail.com>

Fri, Sep 21, 2018 at 3:30 PM

To: "Air Division 1, rr" &lt;airdivision1@deq.virginia.gov&gt;, "Dowd, Michael" &lt;michael.dowd@deq.virginia.gov&gt;, patrick.corbett@deq.virginia.gov

Please see my attached comments. Thank you.

Heidi Dhivya Berthoud

Secretary Friends of Buckingham

info@friendsofbuckinghamva.org

<http://www.friendsofbuckinghamva.org/><https://www.facebook.com/ProtectBuckingham>

Cell 434 979 9732

**Comments BCS air permit HDB 9-21-18.pdf**

738K

## Air permit comments about the proposed Buckingham Compressor Station

Heidi Dhivya Berthoud 9-21-2018

[heidi1008@gmail.com](mailto:heidi1008@gmail.com)

434 979 9732

366 Wyland Rd

Buckingham VA 23921

Our home is high on a bluff overlooking the James River and out towards the Blue Ridge. As I write, I sit on our southwest deck, my 3 season outdoor office, with my 3 feline assistants, who inspire deep purpose in all that I do. We are about 6 miles from the proposed BCS, and about 1 mile downstream from the proposed HDD crossing; the HDD would be just upstream from Yogaville. I am part of the Yogaville Community. I enjoy the quiet and clean air of my country abode with my husband, 3 cats and wildlife. I speak for my family, and also as a member of Friends of Buckingham.

DEQ and Dominion assure us this compressor station would be the best in class, meeting all regulations. We like our air and water clean and we don't want the tons of pollutants dumped on us that the 'regulations' say are okay.

We ask for a 30-day extension of the comment period.

Please deny this permit and immediately delay until the issues below are properly addressed.

At the air permit public hearing at Buckingham Middle School on 9/11/18 we came to understand from Attorney David Neal's comments [Southern Environmental Law Center - SELC] that the SAPCB has extended capacities and obligations beyond the DEQ air department's narrow scope of technical evaluation of the compressor station. This is also beyond the scope of the SWCB. Thus SAPCB has a hefty and wider scope of responsibility to which I now appeal.

It is the responsibility of the Air Pollution Control Board to consider:

**"2010 Code of Virginia, Title 10.1 - CONSERVATION. Chapter 13 - Air Pollution Control Board (10.1-1300 thru 10.1-1328) § 10.1-1307. Further powers and duties of Board.**

E. The Board in making regulations and in approving variances, control programs, or permits, and the courts in granting injunctive relief under the provisions of this chapter, **shall consider** facts and circumstances relevant to the reasonableness of the activity involved and the regulations proposed to control it, including:

1. The character and degree of injury to, or interference with, safety, health, or the reasonable use of property which is caused or threatened to be caused;
2. The social and economic value of the activity involved;
3. The suitability of the activity to the area in which it is located;"

I will address this statute's 3 sections below.

**I. The character and degree of injury to, or interference with, safety, health, or the reasonable use of property, which is caused or threatened to be caused.**

Dominion repeatedly asserts that safety is their first priority, to us, to their stockholders, in their green-washed advertising. For 4 years now we have asked for, and have yet to see evacuation plans. I appeal to the SAPCB to not allow approval of an air permit without considering health and safety first – it appears to be your number one directive. Worst-case scenarios must be addressed. The Red Cross could easily help figure things out, and they are motivated; even if our elected officials are not. We don't want anyone to live near a high pressure 57,000+ hp compressor station, which is highly explosive [methane is not only highly explosive, it is also 86 x more of a green house gas & ozone destroyer than CO<sub>2</sub> Scientific American, December 2015 <https://www.scientificamerican.com/article/how-bad-of-a-greenhouse-gas-is-methane/%5D>, highly toxic, and an easy terrorist target.

If this permit is granted, it will allow the ACP to move forward. Knowing that consequence, you have the obligation to look at the larger degree of injury to all of us. The combined effects of gHg emissions of both the ACP and MVP have been equilibrated to an additional 46 coal burning plants and 25 million cars. See the reporting of Oil Change International: **New analysis: Mountain Valley and Atlantic Coast Pipelines are Climate Disasters**, Feb, 2017, <http://priceofoil.org/2017/02/15/new-analysis-mountain-valley-and-atlantic-coast-pipelines-are-climate-disasters/>. This does not move us forward, but instead contributes disastrously to the urgent climate crisis.

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On September 12, 2018, the **Northam Administration Takes New Steps to Fight Climate Change, Ocean Acidification**, <https://www.governor.virginia.gov/newsroom/all-releases/2018/september/headline-829610-en.html> That's so encouraging. But! No-where does he talk about canceling the ACP and MVP. This is the behavior of insanity.

The first of **three announced actions** are to:

1] *collaborate on reducing carbon pollution from the transportation sector*. Ignoring the equivalence of 25 million additional cars sets this plan back from the start. The second action has a broad reach, and close to home; 2] *to Combat Ocean Acidification and develop and Ocean Acidification Action Plan*. The third action: 3] *Develop a framework for limiting methane leakage from natural gas infrastructure and landfill*. Hey! Let's keep it in the ground! The safest and wisest thing to do. We all know plumbing inherently leaks. It's the nature of the beast. Why go there when we know these pipelines are not needed, and we have renewable alternatives that far outpace fossil fuels economically, provide more local jobs, and don't contribute to gHG.

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At a Virginia Environmental Justice Coalition [VEJC] meeting with the DEQ air department on 9/20/2018, I talked with Mike Dowd about this, and how it took some environmentalists to point an infrared camera at pipeline infrastructure to show the methane leakage that industry was not admitting to. He said, he wished DEQ could afford those cameras. In this meeting, the DEQ made clear to us how under staffed and funded they are. Their goal is to have 50 staffers, whereas now they have 38, and it takes 2 ½ years to get a permit reviewer up to speed. That's worrisome.

We activists have created our own Pipeline **CSI – Compliance Surveillance Initiative**, <http://pipelineupdate.org/csi/> and we get regular reports of the ongoing construction disasters of the MVP, which DEQ cannot keep up with. Citizens are doing what the government cannot, and we warned y'all about the impossibility of doing these projects. Now we all have to live by the consequences of a fractured, fragmented review process. You, SAPCB have the capacity to review the larger picture. *Please* do so! MVP will no doubt need a compressor station, a huge omission of their plan. You could just say no to the BCS, and set firm precedent for the MVP.

Matt Strickland just attended a climate summit in California, where Gov Brown signed a pledge for California to go 100% renewable by 2045. We can't do that AND have any new pipelines.

My life work is on the preventative end of the spectrum. I am a massage and yoga therapist and teacher and a retired dental hygienist. Ralph Northam is a doctor who has pledged the Hippocratic Oath to do no harm. He lives a very conflicted life, because by not denying these pipelines he is incurring immediate local, regional and global damages, disease and death by allowing the poisoning of our air, water, land, health. I say the SAPCB has the obligation and power to protect us from his wavering inaction.

I am the secretary for Friends of Buckingham [FoB], but as is the case in volunteer grassroots organizations, I am also the Baseline Testing Project Manager. At the VEJC/ DEQ meeting on 9/20/18, the DEQ expressed great interest in the baseline testing that we are doing. We have asked that:

**Prior** to permitting, the DEQ must require and complete a Quantified Risk Assessment (QRA) and work with other state agencies to conduct a Health Risk Assessment (HRA) and a Health Impact Assessment (HRI). This would counter the compartmentalization of hazards to water from hazards to air, from safety, environmental justice, health impacts from each different 'class' of toxic pollutants and emissions and site suitability.

As Baseline Testing Project Manager for FoB, I went to the local, then regional health departments to ask for assessments. They sent me on to you, the DEQ, who also said no. We were left to defend for ourselves. Thus we did the right thing, taking up the huge project of testing 30 well water sites close to the 26 miles of proposed ACP in Buckingham. We have done air monitoring for PM, VOC's, formaldehyde and H2S, in 8 homes around the compressor station site and are in process with health surveys. We are

also monitoring the 36 streams crossings by the ACP, including 7 flood plains, which is part of the collaborative Pipeline CSI program mentioned above.

This testing should be a standard requirement for any potentially polluting industry. But for this to be a regulatory requirement, would be an admission of the dangers. I also understand that these projects are very costly. We have written and received grants for this project for a mere \$40,000, but its all volunteer labor doing the legwork. I agreed to send links to our website, which we have the intention of sharing with all who are working to protect their air, water, land, health.

<http://www.friendsofbuckinghamva.org/friends/baseline-testing-for-well-water/>

<http://www.friendsofbuckinghamva.org/friends/baseline-testing-a-compilation-of-resources/>

This is the program FoB is following: **Citizen Science Toolkit**, [http://www.friendsofbuckinghamva.org/friends/wp-content/uploads/2017/04/SWEHPCitizen\\_Science\\_Toolkit.pdf](http://www.friendsofbuckinghamva.org/friends/wp-content/uploads/2017/04/SWEHPCitizen_Science_Toolkit.pdf), created by **Southwest Pennsylvania Environmental Health Project [SWPA-EHP]**, <https://www.environmentalhealthproject.org/>. This toolkit was just recently created in 2018 for communities afflicted by oil and gas development.

We consulted extensively with Eric Faisst, Director of the Madison County Health Department, who shepherded the only public comprehensive baseline testing project on the planet, which was a harmonic convergence of many unusual circumstances, not the least important, is that Eric's background is in environmental health, and that 2 members of the Madison County Board of Supervisors requested it [Buckingham Supervisors sold us out, laid out the red carpet for Dominion who has been essentially bribing the community for years. There were 87 comments against the SUP for the BCS, 4 in favor]. Eric collaborated with SWPA-EHP. He has offered to confer with Virginia State government on the work he is doing. Please take him up on it. Let me know if I can cheerlead that process by directing me to the most effective department.

**Madison County (NY) Health Department Baseline Community Environmental Monitoring Results. Madison Cty, NY, Dept Health – compressor station testing**, <http://www.friendsofbuckinghamva.org/friends/wp-content/uploads/2017/04/1Madison-Cty-NY-Dept-Health-compressor-station-testing.pdf>, for a 36-page report including well, surface waters, air, noise.

**II. The social and economic value of the activity involved.** The owners of Transco Pipeline have said there are enough pipelines in place to meet demand. THESE PIPELINES ARE NOT NEEDED. It is well known that renewables are far more economical than fossil fuels, nuclear.

SAPCB, I urge you to weigh in on this essential issue that seems to be first and foremost concern of many who may not be convinced [uneducated] about the environmental,

environmental justice, safety and health risks, which all have their costs, which are not even factored into the costs, as the industry would not bear them, the ratepayers would.

Unnecessary high capacity natural gas pipelines are being built across our nation. Investors will continue to build pipelines as long as there is an outdated federal policy guaranteeing at least a 14% rate of return with no risk.

#### **Economy:**

- On average only 54% of existing natural gas pipeline infrastructure is being used  
<https://www.nrdc.org/experts/amy-mall/natural-gas-industry-admits-new-pipelines-arent-needed>
- CEO & President of the South Carolina Small Business Chamber of Commerce, Frank Knapp, warned that Dominion Energy was misleading the public at a press conference, <https://scsbc.org/about/president-and-ceo-frank-knapp/>. He also said Virginia was paying for a pipeline they didn't need
- Cost of the new pipelines will make energy costs rise by 30% or more
- Higher energy costs will strain businesses and put jobs at risk
- Renewables are on track to produce energy cheaper than fossil fuels,  
<https://www.forbes.com/sites/dominicdudley/2018/01/13/renewable-energy-cost-effective-fossil-fuels-2020/-2049127d4ff2>
- Tesla Giant Powerpack Battery reduced energy costs by 90% in Australia,  
<https://electrek.co/2018/05/11/tesla-giant-battery-australia-reduced-grid-service-cost/>

Three excellent papers on the economics of these pipelines at FoB site:  
<http://www.friendsofbuckinghamva.org/friends/economics-of-the-pipelines-3-papers-by-tom-hadwin/>

#### **To Understand Pipeline Economics Follow the Money**

**Excerpts from Comments to the SCC\_Aug17-2018**

**Hadwin-Comments\_Air-Quality-Permit-Buckingham-Compressor-Station**

The above articles are authored by Thomas Hadwin. Mr. Hadwin worked in electric and gas utilities in Michigan and New York. He led a multi-disciplinary team responsible for siting and gaining regulatory approval of multi-billion dollar projects. The group was also responsible for assuring that company facilities complied with state and federal environmental regulations.

He also served as a tech entrepreneur, national business consultant and educator.

You can also go to this site for more articles, which is produced by the **Friends of the Central Shenandoah Valley**, <http://www.censhen.org/>. Contact: tomh@censhen.org

### III. The suitability of the activity to the area in which it is located

Excerpts from 2 papers by Lakshmi Fjord, PhD on FoB website.

#### **FoB Critical Questions BCS Air Permit 9-18-18**

<http://www.friendsofbuckinghamva.org/friends/wp-content/uploads/2018/09/FoB-Critical-Questions-BCS-Air-Permit-9-18-18.pdf>

#### **UH Household Study Stats Sheet 9-18 9-18**

<http://www.friendsofbuckinghamva.org/friends/wp-content/uploads/2018/09/UH-Household-Study-Stats-Sheet-9-18-9-18.pdf>

#### **Unsuitability of Union Hill, Buckingham VA as only ACP Virginia compressor station site**

Dominion has consistently used misinformation about the factual population, race, and omission of historic cultural resources in submissions to Buckingham elected representatives, to FERC and DEQ. Misinformation that erases the name of the community, denser populated numbers of people living in close proximity, majority African American race, and erasure of their Former Slave and Freedmen history (as well as former plantation history) has shaped decision-making at every level of ACP's permit processes.

1. Dominion unfairly singled out Buckingham County from all counties along the three state route of ACP to claim it has "no historic resources" whether archaeological or architectural in that segment. Yet in all other counties, completely similar resources of early and mid-20<sup>th</sup> Century and 19<sup>th</sup> Century homes, churches and their cemeteries, bridges, dilapidated farm structures and stores, etc. were listed and photographed for 1674 pages. Alone, Buckingham's history was/is denied and erased.

- ❖ In Sept. 18, 2016 ACP filed a 1674 page cultural resource application to FERC. For Buckingham County only, ACP had "no recorded resources identified within the modified project APE" (Appendix D: 31).

- ❖ In March 24, 2016, ACP filed their Addendum of cultural resources. In Appendix D on P. 31, for Buckingham ACP reports only "three [total] resources are "documented within the modified project APE include three single-family dwellings that range in date from circa 1940 to circa 1965 . . . They have no known association with a significant event or person and are not associated with any broad patterns in history."

Pp. 330, 331, and 332 are photos of that list of homes/addresses: 330 & 331 **are the same home/same photo. 332 is not in Union Hill.** L. Fjord identifies 330/331 – the only cultural resources listed for the whole county of Buckingham - as Theo Haskins' on S. James River Highway, an abandoned trailer next to a modular home, without the family cemetery that adjoins it.

- ❖ That is, Dominion's contractors had to visibly ignore 99 homes on all sides of the CS 2 site, 2 historic black churches and their cemeteries (Union Hill Baptist est 1868; Union Grove Missionary Baptist est. circa 1920); 1 historic white church and cemetery est. 1831, 2 historic black school sites, the 1880s Freedmen home place of the Harper family next to the proposed CS site, no photos of the Variety Shade tobacco barn or of Shelton Store, which is visible from the road in Union Hill.
- ❖ May 3, 2016, "Union Hill/Woods Corner Rural Historic District" Buckingham, VA was listed by Preservation Virginia as a "Most Endangered Historic Place" in Virginia.  
Notification of that listing and its complex of historic resources, marked and unmarked slave burials, churches, cemeteries, former plantation sites, farm structures, homes, photographs, and slave plantation neighborhood history have been part of public record of comments made to the Buckingham Planning Commission, the Buckingham Board of Supervisors, to FERC, by Dr. Lakshmi Fjord, Justin Sarafin and Sonja Ingram of Preservation Virginia since August 2016.

2. Dominion knowingly erased the existence of Union Hill as a known community, and its 99

households visibly within 150ft – 1-mile radius on all sides of their ACP VA compressor

station site. In their 2015 FERC application and in all local and state permit processes both written and submitted at public hearings, ACP used the 2010 census average person per square mile data for the whole of Buckingham County – 29.6 – to report the population for ACP CS 2.

- ❖ On May 30, 2018, the spokeswoman for Dominion to the Governor's Advisory Council on Environmental Justice claimed "it is the law" to do so -- when National Environmental Protection Act-NEPA guidelines state the opposite is true:

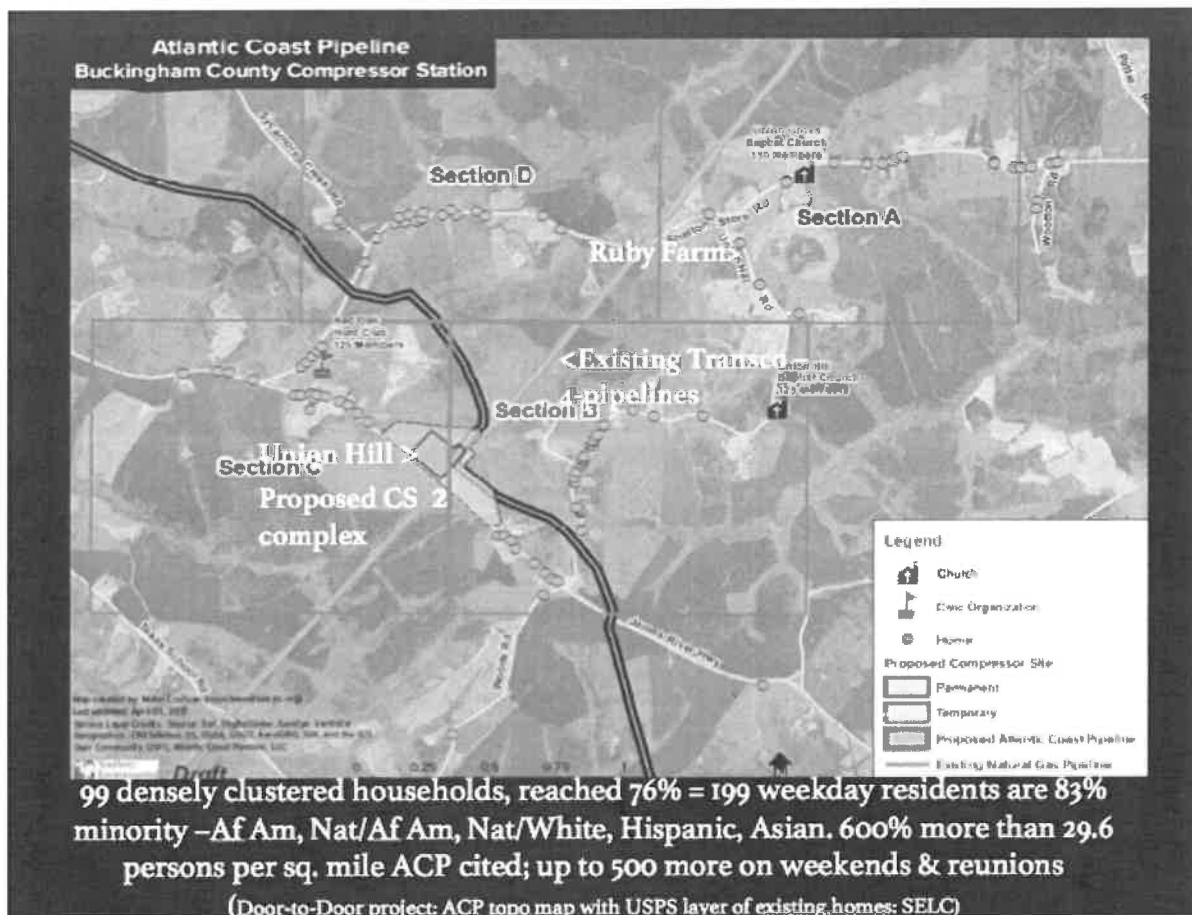
"The fact that census data can only be disaggregated to certain prescribed levels (e.g., census tracts, census blocks) suggests that pockets of minority or low-income communities, including those that may be experiencing disproportionately high and adverse effects, *may be missed in a traditional census tract-based analysis.*" *Caution is called for in using census data due to the possibility of distortion of population breakdowns* ... In addition to identifying the proportion of the population of individual census tracts that are composed of minority individuals, analysts should attempt to identify whether high concentration "pockets" of minority populations are evidenced in specific geographic areas. ... The IWG guidance also advises agencies not to 'artificially dilute or inflate' the affected minority population" (1997, 15-16).



- ❖ The Union door-to-door household study of Union Hill designed and conducted by Dr. Lakshmi Fjord (UVA, Dept. of Anthropology) began in August 2016 to uncover the actual 1-mile radius demographic and historic data for the CS 2 site has had 3 stages for a total of 4 months, and ending Sept. 4, 2018. The study follows NIH protocols for health information confidentiality, and community research guidelines. Open-ended interviews of 1-1.5 hours took place in 67 of the 75 households reached. Data includes: factual population, race, ages, pre-existing diagnosed health conditions, family heritage in Union Hill and nearby, and existing economic or food source uses of their land.

ACP's Buckingham CS site map found at dom.com, with a layer of household addresses added by Southern Environmental Law Center based on USPS postal addresses, proves that Dominion always knew and could submit accurately that CS is not "sparsely populated," is not 29.6 people per square mile.

- ❖ There are many cost benefits to Dominion to erase the population of Union Hill. By contravening NEPA guidelines, FERC in ACP's Final Environmental Impact Statement-FEIS reports no environmental justice issues besides low-income for the entire ACP route, which includes Union Hill-sited CS 2 (FEIS 4.9.9.1 Demographic and Economic Data, Vol 4-512). FERC notes their concerns if there were an African American majority population at this site:



“As discussed in section 4.11.1, air pollutants associated with ACP and SHP include increased dust as a result of construction equipment and vehicles, and compressor station emissions, which include carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>), methane, and nitrous oxide (NO<sub>x</sub>); volatile organic compounds (VOCs); and particulate matter with an aerodynamic diameter less than or equal to 2.5 microns (PM<sub>2.5</sub>). These air pollutants are known to increase the effects of asthma<sup>31</sup> and may increase the risk of lung cancer (Nafstad et al., 2003).

Due to high rates of asthma within the overall African American community, we consider this community especially sensitive” (FEIS Vol 4:512)

- ❖ Union Hill household data including revised population, race, and existing diagnostic health conditions, is in the public record to Buckingham elected representatives, 2016-17; to FERC in EIS public comments by Dr. Fjord and by Southern Environmental Law Center (SELC), 2017; by Dr. Fjord in 401 Water permit comments and NW12 Water Board comments, 2017-18.

- ❖ Updated household data (Sept. 3, 2018 updates):
  - 75 of 99 households reached for a 76.5% response rate, an outstanding rate in social science research.
  - 199 weekday residents; with hundreds more on weekends, bimonthly, etc.
  - 83% are minorities: African American, Native American/African American, Native American/White, Hispanic, and Asian
  - 17% are White
  - Children 0-17 are 32%; Elderly are 25%
  - For 67 households, we have listed in the table existing diagnosed health conditions that would be impacted by the combination of emissions applied for at BCS, including particulate matter, radon, volatile organic compounds, and list of EPA emissions DEQ lists in their draft air permit for ACP.
  - Known pre-existing diagnoses at Union Hill, include diabetes, asthma and other lung conditions, chronic bronchitis and pneumonia, heart conditions, breast and other cancers, COPD, lupus, kidney disease, epilepsy, multiple sclerosis, brain tumor, migraines from 35 households in our study who responded to this pre-existing health conditions question.

3. The Air Pollution Control Board must consider that so far at the local and state level no “site suitability” study and accurate report has been placed in the public record by Dominion for Union Hill CS 2 compressor station. At every phase of the application process, Dominion has been allowed by Buckingham Board of Supervisors, by FERC, and DEQ to perpetuate the myth that BCS is a “sparsely populated” place when it serves them:

- i. to compressor stations 200 miles apart, non-industry standard;
- ii. to have shut off valve distances at 15.7 miles apart at this site, which is not Pipeline Hazard and Safety Administration Agency standards for this population size;
- iii. to allow highest PSIS of pressure at this site;
- iv. to locate the intersection of the existing 4-pipeline Transco corridor with the new ACP pipeline in the middle of a huge wetlands;
- v. where 100% of the drinking water is from that shard aquifer, through individual water wells;
- vi. where A1 agricultural zoning was exempted for heavy toxic polluting new industrials complex;
- vii. where there is no industrial use, yet claimed to be so when ACP and FERC noted “visibility issues” with this complex;
- viii. where there is scarce internet access, yet ACP will build a 125ft. wifi tower and not grant community requests for access to wifi as the only community benefit;

Most egregiously, ACP’s application, the local Board of Supervisors, and DEQ have allowed Dominion to:

- ❖ Erases impacts on a minority community, and its particular and now rare in Virginia historic Freedmen community still living where their ancestors were enslaved;
- ❖ Erased that history in its cultural resource report, **only filed after Advisory Council on Historic Preservation (ACHP) wrote a rare comment of concern** about that complete omission to FERC;
- ❖ Erases need for closer study of the health impacts on this minority community which FERC in its ACP FEIS states would be concerned if BCS were a majority African American community. “ But, FERC stated it is not, using ACP’s census data not the expert data submitted by Dr. Fjord and SELC on actual population;
- ❖ 29.6 persons per square mile allow Dominion to have 75% thinner pipes and up to 500% longer shut off valve distances. For the BCS, FERC FEIS states valve distances are 15.6 miles apart vs. 2 miles for most populated areas. These benefits to the developer at the expense of impacted residents must not go on.

Site Suitability for the BCS, must now be the responsibility of the Air Control Board and the Governor because of the slave plantation legacy in Buckingham.

- ❖ The local Board of Supervisors accepted ACP flawed and incomplete information for the special use permit. Of 91 comments, 87 were against, 4 in favor; Board voted to approve.
- ❖ Deliberate erasure of Buckingham Slave history began in 1869 when vigilantes burnt the courthouse to destroy records of enslavement, fearing Buckingham’s 2:1 majority former slaves’ voting for restitution.
- ❖ In ACP process, African Americans who spoke out against the special use permit have faced reprisals.

DEQ Air and Renewable Energy Director, Mike Dowd, disagreed with FERC’s finding that if Union Hill were populous and a minority community it *would matter* to accepting ACP’s application for BCS site. At the Buckingham air permit public info session, Mr. Dowd stated that “population size” doesn’t matter because all emissions are below EPA standards in this draft air permit. DEQ staff reported having worked hard to research and insist on technology changes to fix this “only time DEQ failed an air permit by a developer,” according to Mr. Dowd.

We are all in this together. Yet this process is not inclusive, nor comprehensive. I ask you to consider where is your moral compass pointing? Please don’t hold Dominion’s hand, taking us all to the edge of extinction. Just say no to this permit, because you can,

because ethical, credible economics and science mandates that you do. Thank you for saving us from ourselves.

Heidi Dhivya Berthoud

Secretary Friends of Buckingham

[info@friendsofbuckinghamva.org](mailto:info@friendsofbuckinghamva.org)

<http://www.friendsofbuckinghamva.org/>

<https://www.facebook.com/ProtectBuckingham>

Cell 434 979 9732



Air Division 1, rr <airdivision1@deq.virginia.gov>

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## Re: Air Quality Permit for the Buckingham Compressor Station

1 message

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**Jim Bolton** <jrbolton035@gmail.com>  
To: airdivision1@deq.virginia.gov

Wed, Sep 19, 2018 at 10:18 AM

Please accept and consider the attached comment regarding the air quality permit for the Buckingham compressor station.

Thank you.

James Bolton



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**AQCB Comment.docx**  
189K

September 18, 2018

James Bolton  
312 Perry Lane  
Lovingston, VA 22949

Virginia Department of Environmental Quality  
Piedmont Regional Office  
4949-A Cox Road  
Glen Allen, VA 23060  
[airdivision1@deq.virginia.gov](mailto:airdivision1@deq.virginia.gov)

To whom it may concern;

Thank you for the opportunity to comment on the issuance of an Air Quality Permit for the Atlantic Coast Pipeline's (ACP's) proposed Buckingham Compressor Station.

While officials of the VA Department of Environmental Quality (DEQ) have stated that it lacks the authority to take issues other than those specifically related to air quality into consideration when evaluating a permit application, this contention is, in fact, explicitly contradicted by the laws of the Commonwealth which make it clear that Virginia, and the Air Pollution Control Board in particular, has both the authority, as well as the duty, to take these issues into consideration in the process of permit evaluation, i.e. that:

*"The Board in making regulations and in approving variances, control programs, or permits, and the courts in granting injunctive relief under the provisions of this chapter, shall consider facts and circumstances relevant to the **reasonableness of the activity involved** and the regulations proposed to control it, including:*

- 1. **The character and degree of injury to, or interference with, safety, health, or the reasonable use of property which is caused or threatened to be caused;***
- 2. **The social and economic value of the activity involved;***
- 3. **The suitability of the activity to the area in which it is located; and***
- 4. **The scientific and economic practicality of reducing or eliminating the discharge resulting from such activity."***

(Code of Virginia, Chapter 13. Air Pollution Control Board, Article 1. General provisions, § 10.1-1307, E., emphasis added)

Regarding the "reasonableness of the activity involved", evidence has mounted, and continues to do so, that this pipeline project is not needed. Dominion Energy, the lead partner in building and operating the project, has based its case for project need on existing subscriptions for transmission capacity from its

"customers", but since these "customers" are also affiliate partners in ACP, LLC, this subscription-based need for the project must be called into question.

As far back 1999 a FERC Policy Statement, stated that the policy of basing project need on customer contracts should be de-emphasized.

*"In the policy statement, the Commission explained that as the natural gas marketplace has changed, the Commission's traditional factors for establishing the need for a project, such as contracts and precedent agreements, may no longer be a sufficient indicator that a project is in the public convenience and necessity."*<sup>1</sup>

And:

*"The amount of capacity under contract... is not a sufficient indicator by itself of the need for a project, because the industry has been moving to a practice of relying on short-term contracts, and pipeline capacity is often managed by an entity that is not the actual purchaser of the gas. **Using contracts as the primary indicator of market support for the proposed pipeline project also raises additional issues when the contracts are held by pipeline affiliates.** Thus, the test relying on the percent of capacity contracted does not reflect the reality of the natural gas industry's structure and presents difficult issues."*

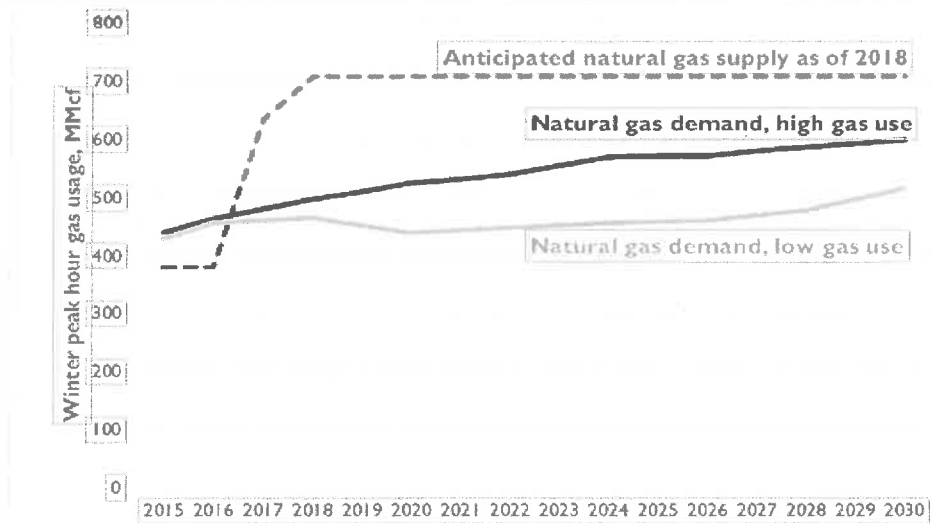
(Statement of Policy, Certification of New Interstate Natural Gas Pipeline Facilities, Docket No. PL99-3-000, Federal Energy Regulatory Commission, September 15, 1999, p.16.)

Indeed, FERC Commissioner Cheryl LaFleur emphasized the existence of this disconnect between subscription-based need and, actual, real-world need for the project in her rare dissent to FERC's grant of a permit of public convenience and necessity, and once again recommended that the Commission review its policies accordingly. This process is apparently in progress at the time of writing.

As far as the actual, real-world need for this project, recent studies such as the September 2016 Synapse Energy Economics report have indicated that the rate of increase in the demand for natural gas in the region, as demonstrated by overall peak need as well as for the generation of electric power, has been slower than anticipated and is expected to remain so in the foreseeable future (until at least 2030). In fact, by the end of 2016, gas supply had already risen enough to meet demand.



Figure 5. Peak hour natural gas demand under scenarios of low and high natural gas use compared to anticipated natural gas supply on existing and upgraded infrastructure



(Wilson, R., Fields, S., Knight, P., McGee, E., Ong, W., Santeen, N., Vitolo, T., Stanton, E., Are the Atlantic Coast Pipeline and the Mountain Valley Pipeline Necessary?, An examination of the need for additional pipeline capacity into Virginia and Carolinas, Synapse Energy Economics, Inc., Sept. 12, 2016, p.18.)

Furthermore, as early as 2015, a study by the Department of Energy stated:

*“Two primary factors mitigate the need for additional interstate natural gas pipeline infrastructure and related capital expenditures in these scenarios. First, the growth in both natural gas demand from electricity generation and natural gas production is broadly distributed rather than geographically concentrated, reducing potential interstate pipeline capacity constraints as well as the need for new interstate pipelines. Second, increasing utilization of capacity that is not fully utilized in existing interstate natural gas pipelines, re-routing natural gas flows, and expanding existing pipeline capacity are potentially lower-cost alternatives to building new infrastructure and can accommodate a significant increase in natural gas flows.”*

(Natural Gas Infrastructure Implications of Increased Demand from the Electric Power Sector, U.S. Department of Energy, February 2015, p.31.)

Finally, in response to Dominion’s contention that recent winter cold spells--the so-called “polar vortex” of 2013-2014 and 2018’s “bomb cyclone”—proved that there was “severely limited capacity” on existing pipelines serving Virginia and North Carolina that underlined the “real and urgent need for the Atlantic Coast Pipeline”, Williams, the owner/operator of Transcontinental Gas Pipe Line, LLC (Transco), the other major interstate pipeline that runs through Virginia (including Buckingham County), indicated that the existing Transco system had “performed remarkably” during the cold weather, meeting 100% of the region’s needs, and that “the infrastructure is in place right now to meet the current demand”

(Robert Zullo, Richmond Times Dispatch, 01/04/2018.),

Williams has also made it clear in their request for rehearing by the South Carolina Public Service Authority dated July 16, 2018 that ongoing modifications to its system will make the additional gas supply represented by the ACP unnecessary, and that Dominion's Plan to pass on the costs of "duplicative infrastructure is against the public interest and the interests of the ratepayers of South Carolina." (Jefferson Griffith III, Austin & Rogers, P.A., Petition for Rehearing and/or Reconsideration, Before the Public Service Commission of south Carolina, Docket No. 2017-370-E, July 16, 2018.)

While it is obvious that the circumstances on the ground are not necessarily the same in VA and NC as they are in SC, there certainly are fundamental similarities. Dominion has repeatedly maintained that the primary purpose of the ACP is to supply gas to power plants region-wide, citing the Bear Garden plant in Fluvanna County (that is being converted from coal to NG), as well as the new gas-fired plants in Brunswick and Greenville Counties in VA, along with multiple plants in NC; but, in reality, all of these plants are already supplied via trunk lines from Transco, and if new infrastructure is, in fact, needed to supply NG to the industrial and domestic markets in Norfolk and Chesapeake, as has also been claimed, certainly there is a cheaper and less environmentally destructive way to do it than to bring a massive greenfield project all the way from WV to do it. (Upgrades to Transco's Southside Expansion pipeline across southern VA that currently supplies both the Greenville and Brunswick plants, and ongoing upgrades to the Columbia system farther north will, for example, provide just such alternatives using an existing rights-of-way, thereby minimizing "duplicative infrastructure" that is not in the public interest.)

In any event, the evidence questioning the very need for this project must be included in any evaluation of the "reasonableness of the activity involved", as well as its "social and economic value".

As for "the suitability of the activity to the area in which it is located", not only was the Special Use Permit issued by Buckingham County obtained under inappropriate and questionable circumstances involving the trading of a pipeline hook-up for subsequent approval, but the decision is currently in the process of a legal challenge that could change the outcome. Certainly, the Board is called upon to hold off on any decision regarding the permit until the appeal has been heard in order to assure that any unnecessary damages resulting from beginning construction of the compressor station are minimized.

Moreover, it has become obvious that the Dominion-provided information about the local Union Hill community that FERC used in its Environmental Impact Statement to dismiss citing issues that had been raised was both incomplete and incorrect. According to the final EIS, the average number of people per square mile in the area to be traversed by the pipeline through Buckingham County is 29.6, a number that was based on census data. However, the results of a recently-conducted independent on-the-ground, door-to-door survey reveal that this figure underestimated the actual number by close to 500%. In addition, when the area immediately surrounding the compressor station was focused on, it was discovered that of 158 residents spoken to, 85% were African American, which fact suggests the possibility that environmental racism may have been a factor in the siting of the station, i.e. that the decision to site the station in this area was influenced by the preponderance of people least equipped to understand and evaluate the risks involved. To make matters worse, the local community is composed of an unusually high percentage of both elderly people and children who may be presumed to be especially sensitive to airborne pollutants.

Perhaps most importantly, the Governor's Advisory Council on Environmental Justice visited Union Hill earlier this year and concluded that the ACP in general would have "disproportionate impacts for people of color and for low-income populations due to gas infrastructure expansion" and recommended that the "Governor direct DEQ to suspend the permitting decision for the air permit for the Buckingham compressor station pending further review of the station's impacts on the health and the quality of life of those living in close proximity."

For all the reasons outlined above, and in adherence to both the laws of the Commonwealth and its duty to protect the public interest and public health, as well as to uphold social and environmental justice, DEQ and the Air Quality Control Board can and must, after taking the preceding issues into account, deny issuing an air quality permit for the Buckingham Compressor Station.

Respectfully,

James Bolton



Air Division 1, rr &lt;airdivision1@deq.virginia.gov&gt;

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**Public Comments on the Buckingham Compressor Station**

1 message

**Bright, Michelle** <mbright@nrdc.org>

Mon, Sep 10, 2018 at 5:10 PM

To: "airdivision1@deq.virginia.gov" &lt;airdivision1@deq.virginia.gov&gt;

Dear Ann Regn,

Please accept these attached 1,123 public comments from members and activists on behalf of the Natural Resources Defense Council (NRDC) urging the Virginia Department of Environmental Quality to reject the permit for the Buckingham Compressor Station associated with the Atlantic Coast Pipeline project. Compressor stations are known to emit toxic air pollutants, putting nearby communities at increased risk of respiratory and cardiovascular diseases, neurological and developmental disorders, and cancer. And the DEQ's draft permit does not ensure full protections from the harms of local and regional air pollution. For these reasons we urge you to protect the health of Virginia's communities and reject the permit for the Buckingham Compressor Station. Thank you for your consideration.

**MICHELLE BRIGHT***Communications Assistant II**Digital Fundraising and Advocacy**Policy and Program Communications***NATURAL RESOURCES****DEFENSE COUNCIL**

40 W 20TH STREET

NEW YORK, NY 10011

212.727.4584

MBRIGHT@NRDC.ORG

NRDC.ORG

Please save paper.  
Think before printing**NRDC activist comments on ACP 9.10.18.xlsx**

63K

*Sampled 1,123  
comments attached*

first_name	last_name	city	state	comment
				<p>Dear Virginia Department of Environmental Quality:¶</p> <p>¶</p> <p>I'm writing to urge you to deny the permit for the Buckingham Compressor Station for the Atlantic Coast Pipeline immediately. ¶</p> <p>¶</p> <p>Compressor stations are known to emit toxic air pollutants that can put nearby communities at increased risk of respiratory and cardiovascular diseases, neurological and developmental disorders, and cancer. ¶</p> <p>¶</p> <p>DEQ's draft permit does not ensure full protections from the harms of local and regional air pollution. For example, the permit allows unnecessarily high levels of nitrogen oxide and it relies on flawed modeling of harmful formaldehyde and hexane pollution.¶</p> <p>¶</p> <p>I'm deeply concerned about these permit defects and the effects that this compressor station -- and the reckless Atlantic Coast Pipeline project as a whole -- could have on my family and families across our great state. We deserve better! ¶</p> <p>¶</p> <p>I call on you to commit to protecting the health of Virginia's communities by rejecting the permit for the Buckingham Compressor Station. Thank you.</p>
matthew	chamberlin	staunton	VA	



Air Division 1, rr &lt;airdivision1@deq.virginia.gov&gt;

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**The ACP: Safe for Buckingham County**

1 message

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**Kevin Broad** <Kevin.Broad.12812402@p2a.co>  
Reply-To: harleyridernut@gmail.com  
To: Ann Regn <airdivision1@deq.virginia.gov>

Fri, Sep 21, 2018 at 4:20 PM

Dear Director Ann Regn,

The Atlantic Coast Pipeline team has shown considerable responsibility in its plans for the Buckingham County Compressor Station. Although state and federal laws and regulations classify the station as a "minor" source of emissions, the ACP team has agreed to limits and control technologies that are typically required for operations with much higher levels of emissions. In fact, the Virginia Department of Environmental Quality draft air quality permit for the facility contains the most stringent emissions limits imposed on any minor or major natural gas compressor stations in the state.

The station and its operations are designed to drastically minimize emissions, making it safe for our community. Modeling has demonstrated that any emissions will be well below federal and state standards designed to protect human health. Even though these standards are not typically applied to "minor" sources of emissions like the compressor station, they will be met—and surpassed—by the Buckingham facility.

Thanks to the exhaustive review, the Atlantic Coast Pipeline is a safe, environmentally responsible pipeline project. And Virginia greatly needs the affordable natural gas it will bring to our region. Please do not stand in the way of the huge economic benefit it could have for our communities.

Regards,  
Kevin Broad  
341 Norfolk Ave  
Lynchburg, VA 24503



Air Division 1, rr &lt;airdivision1@deq.virginia.gov&gt;

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**Buckingham Compressor Station**

1 message

**Kirk Cox** <DelKCox@house.virginia.gov>

Mon, Sep 10, 2018 at 2:50 PM

To: "airdivision1@deq.virginia.gov" &lt;airdivision1@deq.virginia.gov&gt;

Please see the attached letter addressed to Director Paylor from Speaker Cox and Leader Norment regarding the Buckingham Compressor Station.

Sincerely,

Zachary Wood

Legislative Aide to Speaker Cox

**M. Kirkland "Kirk" Cox**

Delegate, 66<sup>th</sup> District | Speaker of the House  
Representing Colonial Heights & Chesterfield (part)

District: (804) 526-5135 | Richmond: (804) 698-1066



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**091018 Cox-Norment letter to Paylor.pdf**

136K



Commonwealth of Virginia  
General Assembly  
RICHMOND

September 10, 2018

David K. Paylor, Director  
Piedmont Regional Office  
4949-A Cox Rd  
Glen Allen, VA 23060

**RE: Buckingham Compressor Station**

Dear Director Paylor:

As elected leaders in the Virginia General Assembly, we have for the past four years strongly supported the proposed Atlantic Coast Pipeline. We view it as an essential part of a secure, reliable and affordable energy future for the Commonwealth. But we also recognize that no project, no matter how valuable from an energy standpoint, should move forward if it jeopardizes Virginia's natural resources. Fortunately, we believe that the Atlantic Coast Pipeline and its associated facilities, including the Buckingham Compressor Station, pose no such threat. Dominion Energy, its partners in the pipeline project, and regulators have repeatedly demonstrated their strong commitment to minimizing the project's environmental impact. The draft air permit for the Buckingham Compressor Station is consistent with that commitment.

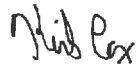
At the DEQ's recent informational meeting in Buckingham County, the draft permit was recently described as the most stringent for a compressor station in the country. We understand the emission limits in the draft are four to 10 times more rigorous than those in any other recently issued compressor station permits in Virginia. The station's engineering design, operational measures and emissions controls have been described as "best in class" and "state-of-the-art," and a close look at the technology confirms those descriptions. The project uses pollution controls normally found on much larger facilities with much higher levels of emissions. These systems go well beyond those usually required for "minor" emissions sources, such as this station. This is the case for the technology used to control a variety of substances, such as nitrogen oxide, carbon monoxide, volatile organic compounds and methane.

Additionally, we understand that modeling by Dominion Energy using DEQ approved methods has shown the station's emissions, even when it is operating at maximum output, will not affect Virginia's air quality. The modeling showed that any emissions from the facility will be far below the federal and state standards designed to safeguard human health.



We commend the DEQ for developing a draft permit that provides such a high level of protection to Virginia's air quality. We also commend Dominion Energy for agreeing to the stringent limits and advanced control technologies found in the draft. In our view, the draft permit is an important step forward for the compressor station and the entire Atlantic Coast Pipeline project. In developing the document, the DEQ has helped ensure a reliable, secure, affordable and cleaner energy future for the entire Commonwealth.

Sincerely,



M. Kirkland "Kirk" Cox  
Speaker of the House



Thomas K. Norment, Jr.  
Senate Majority Leader



Air Division 1, rr <airdivision1@deq.virginia.gov>

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## Comments to Air Board

1 message

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**Swami Dayananda** <swdayananda@gmail.com>  
To: airdivision1@deq.virginia.gov

Fri, Sep 21, 2018 at 11:56 PM

Dear Air Board members,

Please see attached my comments on Environmental Justice issue at Union Hill and the compressor station.

Thank you.

Swami Dayananda  
108 Yogaville Way  
Buckingham, VA 23921  
434-607-7419



**Comments to Air Board on Environmental Justice case in Union Hill.docx**  
147K

Comments to the Air Board about the Environmental Justice community of Union Hill, Buckingham, VA. A minority, mostly African American neighborhood, faces ACP's massive compressor station in the middle of their community.

Submitted by Swami Dayananda,

108 Yogaville Way, Buckingham, VA 23921 (434-607-7419)

Union Hill residents will receive a disproportionate burden of the air pollution from the 54,000hp compressor station, proposed in the middle of their community.

Yogaville and Union Hill communities have come together since 4 years ago to protect our environment. As a resident in Yogaville, 5 ½ mile away from UH, I am also very concerned about the air pollution affecting the air we breath and the extra air we take in through yogic breathing practices called Pranayama.

But most concerning for me and many others is the health and safety of those whom we come to know well and who have become our close friends. Their homes are within 2 miles of the compressor station. Many are elderly and have medical conditions. This is a community more than 85% minority and mostly African Americans contrary to FERC and Dominion's erroneous statistics of 29.6%. This fact has been uncovered by door to door studies by Friends of Buckingham members and it has not been acknowledged by Dominion.

Union Hill did not receive any significant attention from Dominion in the past four years until Governor's Advisory Council for Environmental Justice (ACEJ) came to Buckingham, toured the sites and met with those who would be impacted. After ACEJ wrote a letter to the governor recommending to review EJ issue surrounding this community, Dominion hired Basil Gooden to speak with community members, offering community improvements such as a recreational center.

Mr. Gooden is a beloved community member who is known by many residents. He seems genuinely interested in making sure that UH community does not end up with nothing in exchange for getting the compressor station in its midst. He and Dominion staff have offered

catered dinner with a meeting during which they made slide presentation and expressed their wish to offer something beneficial for the community and to help with economic development.

Some residents have expressed that nothing Dominion can give could be more important than their health. These people are concerned more about the health and safety of people who live within 2 miles of the compressor station.

I asked a Dominion staff member my concern that no matter what they offer, this is an Environmental Justice case, and as such the compressor station should not be built at UH. People of UH, their children and grand children and their future generation should not be forced to have disproportionate burden of toxic air pollution. He avoided the use of the words "Environmental Justice" and responded that what they want to do is to make sure the community benefits from what Dominion can offer.

It is clear that Dominion will not publicly acknowledge the discrimination, the racism, which is behind their choice of UH for the compressor station. With a promise of gifts and economic development, they may convince many residents to accept the compressor station in return for these temporary benefits. But there are other residents who wish to stand up to this injustice forced on them as African Americans: they want to continue to strive to bring to light what is really happening.

This is my observation of what is happening. Please see attached quotes and letters from VA Environmental Justice Collaborative. They are clear about UH being an Environmental Justice community which needs to be treated with fairness and respect.

I ask the Air Board to please withhold the air permit until you look into this environmental justice issue at Union Hill. Air permit should not be given where there is a group of people whose health will suffer from more pollution because of racism.

Quoted below are the statements from VA Environmental Justice Collaborative:

“Environmental justice is falling through the cracks because each federal or state agency limits its permitting and regulatory authority to fragmented fields of expertise (air *or* water; air *not* safety or noise pollution). This approach excludes comprehensive study of the cumulative risks and hazards faced by impacted residents, and supports denial of responsibility for environmental justice implementation. Thus, EJ communities remain targets for new burdens of toxic producing infrastructure in Virginia.

The Environmental Protection Agency (EPA) defines environmental justice as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. NEPA guidelines detail how to implement environmental justice reviews, including:<sup>1</sup>

Identification and assessment of environmental justice communities using multiple methods, including inclusive local sources to ensure accuracy; Early, meaningful, inclusive, participatory engagement of impacted communities;

Identification and protection of African American, Native American, and other cultural and historical resources; Comprehensive analysis of the cumulative impacts of air, soil, and water exposures and their combined risks to human health over time, with particular emphasis on vulnerable populations -- elderly, pediatric, minority, and low-income residents;

Assessment of pre-existing medical conditions of fence-line neighborhoods; Equitable access to alternative energy and green infrastructure to reduce toxic burdens.

The Environmental Protection Agency (EPA) defines environmental justice as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. NEPA guidelines detail how to implement

environmental justice reviews, including:<sup>1</sup>

Identification and assessment of environmental justice communities using multiple methods, including inclusive local sources to ensure accuracy;  
Early, meaningful, inclusive, participatory engagement of impacted communities;

Identification and protection of African American, Native American, and other cultural and historical resources; Comprehensive analysis of the cumulative impacts of air, soil, and water exposures and their combined risks to human health over time, with particular emphasis on vulnerable populations -- elderly, pediatric, minority, and low-income residents;

Assessment of pre-existing medical conditions of fence-line neighborhoods; Equitable access to alternative energy and green infrastructure to reduce toxic burdens.

Virginia Energy Policy (Code of Virginia § 67-101) energy objectives include “[developing energy resources and facilities in a manner that does not impose a disproportionate adverse impact on economically disadvantaged or minority communities.”<sup>2</sup> In 2017, Governor Terry McAuliffe created the Governor’s Advisory Council on Environmental Justice (ACEJ) under Executive Order #73, to provide “a consistent, action-oriented approach to incorporating environmental justice into decision-making.” Governor Northam’s Executive Order #6 includes: “Engaging the regulated community, local governments, and other interested stakeholders in the development of new protocols”; and, “assessing gaps in DEQ resources or authorities necessary to address challenges identified under this review.”

These commitments by Virginia to resolve the environmental and social injustices identified below demand that energy generation choices give highest priority to the health and safety of the public through equitable access to community-oriented renewable energy.

## **Buckingham Environmental Justice Review**

Union Hill is not suitable for a gas compressor station because of geometric comprehensive and cumulative impacts to air, soil, and 100% of drinking water sources with:

ACP Intersection with existing 4-pipeline William's Transcontinental (Transco) at the Union Hill Compressor Station close to water wells, homes, churches; A proposed 54,000+ horsepower compressor station is sited for a majority African American community over 500% more populated than reported by Atlantic Coast Pipeline (ACP) and the Federal Energy Regulatory Commission (FERC),

ACP's horizontal directional drilling at a seasonal flooding, seismic faultline site under the James River risks entire watershed drinking water;

The African American Freedman community of Union Hill lacks historical preservation of historic black schools, churches, slave burials, and gathering places; According to state data and household studies, pre-existing health conditions in proximate households include asthma, chronic bronchitis and other lung disorders, heart disease, diabetes, cancers, and autoimmune conditions; Residents of Union Hill are disproportionately elderly and very young; in all public comment processes impacted residents give strong dissent with specific data for why not to allow a large compressor station in a minority, Freedmen community;

Emergency first response infrastructure in Buckingham is inadequate for industrial scale leaks, fires or explosions.<sup>3</sup>

**For these two EJ communities, we recommend Governor Northam immediately create:** An interagency Task Force with involvement of impacted residents to look at and take actions to reduce or avoid the comprehensive impacts of the lateral and ACP pipelines and the Virginia ACP compressor station, since no existing agency has authority to address cumulative air, water, and land releases and exposures; to divide and oversee completion of these tasks:

- 1.Undertake: a. Quantitative Risk Assessments (QRA), b. Comprehensive Health Impact Assessments (CHIA), and c. Statements of Impact which taken together address the environmental justice, public health and safety, and cumulative hazards faced by residents of Buckingham (Appendix 1) and Chesapeake;
- 2.Extend the comment period for the Union Hill Compressor Station air

permit to 60 days;

3. Require Dominion Energy to allow Union Hill community representative(s) to enter the Union Hill Compressor Station site to locate unmarked slave burial gravesites and to have gravesites and other archaeological resources surveyed by an independent or public surveyor for the purposes of historic preservation;
4. Undertake and make public baseline analyses of present drinking water, ambient air, transportation and existing health in these communities; and make that data available to the public without incurring delays and costs of FOIA;
5. Immediately notify parents of public school students at schools located in the blast radius of the Chesapeake lateral connection and Union Hill compressor station, and address concerns they raise; and
6. Require developer-funded bonds for both projects to be held in escrow for Impacted Families to apply for direct assistance who experience any adverse health, mortality, economic, or educational impacts.

**For all infrastructure projects, we recommend :**

1. Meaningful participation by impacted populations in permitting and monitoring including effective responses to citizen concerns as per Exec. Order #6;
2. Evaluation of climate and environmental justice impacts in all state policies, programs, and permits; 5
3. Reduction of state disparity in exposure by which black and brown communities disproportionately experience harm from toxic air, unsafe water, and public safety risks;
4. Development of equitable access to renewable energy sources (Appendix 2)
5. Creation of an interagency Task Force with involvement of impacted residents to look at and take actions to reduce or avoid the



comprehensive impacts of the lateral and ACP pipelines and the Virginia ACP compressor station, since no existing agency has authority to address cumulative air, water, and land releases and exposures...”

Thank you.

Respectfully submitted,

Swami Dayananda



Air Division 1, rr &lt;airdivision1@deq.virginia.gov&gt;

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**Comment for Air Board**

1 message

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**Swami Dayananda** <swdayananda@gmail.com>  
To: airdivision1@deq.virginia.gov

Fri, Sep 21, 2018 at 10:22 PM

Dear Air Board members,

Please find my comments and two attachments which are the works I refer to on my comments. Please note that the author of the second attachment is Dr. Larysa Dyrzka whose address is: PO Boc 355, 124 Chapin Trail, White Lake, NY 12786 (Phone: 845-583-4381)  
Thank you.

Swami Dayananda  
4368 Warminster Church Road  
Buckingham, VA  
23921  
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**3 attachments** **Air Permit Hearing Sept. 11, 2018 SD comments.docx**  
129K **Curt Nordgaard ACP BCS air permit comments.doc**  
38K **Dyrzka ACP Buckingham compressor air comments 08272018.pdf**  
1058K

Air Permit Comments presented at Public Comments period on Sept. 11,  
2018 by Swami Dayananda

My name is swami Dayananda; I am from Yogaville, Buckingham, VA

I am here to ask the Air Board to not approve the air permit for the  
proposed Buckingham compressor station by Atlantic Coast Pipeline.

First, due to the insufficiency of the National Ambient Air Quality  
Standard, our health is not protected from the potentially serious health  
risks from the toxic emission from the compressor station.

DEQ staff members assured us that this compressor station meets all  
the regulations under this standard and therefore safe. But on whether  
these standards are sufficient, there was no reassuring answer.

Dr. Nordgaard, a pediatrician at Boston Medical Center, citing many  
academic studies, concludes that "air pollution is harmful even if the  
national standards are not violated."

In 2015, American Medical Association with many other health  
organizations conducted studies and declared that "...the existing  
standards fail to protect public health with a margin of safety..."

DEQ staff members also did not offer any direct answer to the question  
on health impacts from the mixtures of pollutants once they were  
emitted in the air.

Dr. Dyrzska of Physician's for Social Responsibility writes that:

"...standards are set in a form that inaccurately determines health risks  
because they do not fully consider the potential synergistic combination  
of toxic air emissions."

Both of these doctors' papers are attached to my comments.

The fact is that the Nat'l Ambient Air Quality Standard as it exists now  
does not fully protect the citizen's health. I would like to ask the good  
people of DEQ to acknowledge this as they do their best within the  
national standards.

I know that VA DEQ did not create the federal standards nor can you change them. But what the Air Board can do to protect VA's citizens' health, when the federal regulations do not, is to deny the air permit.

Or at the minimum, make sure a Comprehensive Health Impact Assessment is done for review before considering the permit again.

On the related topic of Environmental Justice issue, an African American community of Union Hill will be disproportionately burdened with the toxic air pollutants. Their basic human rights to clean air will be violated.

The 15 member Governor's Advisory Council for environmental Justice toured Union Hill and met with the impacted citizens. They then sent a letter to Gov. Northam calling for a review of the ACP's disproportionate impact on people of color, and in particular the population of Union Hill.

When our neighbors are facing such blatant racial discrimination, there is a moral call for the rest of us to stand with the UH community.

That is why I am here and asking you to not give the air permit for this compressor station. Thank you.

Swami Dayananda  
108 Yogaville Way  
Buckingham, VA, 23921

434-607-7419 (cell)

Requested modifications to the draft Stationary Source Permit for Atlantic Coast Pipeline, LLC to construct and operate a natural gas compressor station at 5297 S James River Hwy, Wingina VA 24599

**1 ACP should notify local authorities prior to each venting event**

*Background*

Venting events have the potential to cause disruption and/or nuisance if detected by the public. For example, detecting natural gas odors may result in calls to and activation of local EMS services. ACP should therefore notify local authorities prior to each venting event.

Add a permit condition under Notifications:

“The permittee shall notify the local Board of Health or equivalent entity and the local fire department at least 24 hours prior to each planned or maintenance venting event”.

**2 DEQ should require regular analysis and reporting of natural gas composition.**

*Background*

Based upon independent measurements, natural gas contains a large and complex set of VOCs (many of which are hazardous air pollutants and/or known or suspected carcinogens).

There is a research group in the Boston area that has taken independent measurements of VOCs in natural gas samples. A recording of a short presentation describing the study and its results can be found here:

<http://www.bu.edu/earth/naturalgaspublichealth/>

There is a link on the page to “morning session”, the presentation of interest starts in that video around 1 hour 13 minutes.

Condition 16: Fuel Monitoring

Should be modified to ensure that ACP is periodically measuring VOC composition and concentrations in gas flowing through the facility, as this is the gas that will be leaked or released as fugitive and venting emissions.

Replace sentence 2 as follows:

“The permittee shall perform annual fuel analysis of on-site natural gas. The details of the tests shall be arranged with the Piedmont Regional Office. Tests shall identify, at a minimum, VOCs typically reported for EPA methods TO-15 or TO-17 for VOC analysis, and use similar or better reporting limits.”

**3 DEQ should require the most recent and stringent emissions controls for pigging operations**

*Background*

A pipeline operator, MarkWest, recently (Apr 2018) reached an agreement with the EPA as a consequence of the company's likely violation of the Clean Air Act during its pipeline pigging operations (see <https://www.epa.gov/enforcement/markwest-clean-air-act-settlement-information-sheet>). As a result of the consent decree, MarkWest is going to publicly release design plans for emissions control technology that will reduce VOC emissions from pigging operations (“Pig Ramps”) as well as educational materials for other technology to reduce VOC emissions from pigging operations (“Jumper Lines”):

“MarkWest will disseminate and make available for use by other oil and gas companies its proprietary design for Pig Ramps, which has been shown to reduce liquid accumulation and emissions from pig launcher and receiver operations. In order to promote the rapid adoption of this innovative device, MarkWest will make available on a public website, no later than six (6) months after the Effective Date, a royalty-free license and information on the Pig Ramp design. MarkWest will also provide educational presentations and host four demonstration or training sessions per year over a three-year period (for a total of 12 sessions), with technical staff available in-person at each session, to demonstrate and encourage the installation and adoption of the technologies developed by MarkWest to reduce VOC emissions from pig launchers and receivers throughout the oil and gas industry. In conjunction with such presentations and demonstrations, MarkWest will develop comprehensive and detailed educational materials on the effective installation, maintenance, and use of Pig Ramps and Jumper Lines to reduce VOC emissions from pig launchers and receivers.”

- MarkWest consent decree, section VI, paragraph 28, pg 16

#### New Condition:

DEQ should add an Emission Control condition stating that Pig Ramps and Jumper Line technologies be added to pigging facilities within 12 months of their design release by MarkWest. DEQ should release an addendum to the permit once it has determined the operating, testing, and recording conditions for these technologies.

#### **4 Fugitive & vented emissions**

##### Condition 7(b): Emissions Controls

Condition 7 outlines a program to detect and repair leaks that generally follows recent EPA guidelines.

After sentence 4, **insert a sentence** stating that if difficult to repair leaks are small enough to defer repair, then they should be repaired the next time the facility is shut down (unless delaying the repair would result in greater emissions than would result from facility shutdown):

“If a leak is found that will emit less natural gas than a facility shutdown, its repair may be delayed until the next facility shutdown unless the summed aggregate of delayed repair natural gas emissions would exceed the natural gas emissions of a facility shutdown.”

Change last sentence to:

“Records of the daily AVO inspection results, repair attempts...and reason for each delay **shall be submitted on a (monthly/quarterly/annual?) basis to the Piedmont Regional Office and also maintained on site.**”

##### Condition 51: (SOE) On Site Records

This permit condition should be revised to ensure availability of detailed hexane venting emissions data.

Sentence 4: Change “...calculate the amount of hexane exhausted during **any** venting event.” to “...calculate the amount of hexane exhausted during **each** venting event.”

Sentence 5: Change to “**Hexane emissions shall be calculated monthly and recorded as the emissions for each venting event, as well as the sum of each consecutive 12-month period.**”

Sentence 7: Change to **“These records shall be submitted to the Piedmont Regional Office (monthly/quarterly/annually?) and kept on site available for DEQ inspection...”**

Additional points:

Criteria pollutants are harmful at concentrations or time intervals that do not violate NAAQS. A partial list of supporting peer-reviewed research includes the following studies:

“Ambient air pollution and the risk of ischemic stroke.”

Journal of the American Medical Association, Internal Medicine.

<https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/1108717>

“Ambient fine particulate air pollution triggers ST-elevation myocardial infarction but not non-ST elevation myocardial infarction: A case-crossover study.”

Particle and Fibre Toxicology.

<https://particleandfibretoxicology.biomedcentral.com/articles/10.1186/1743-8977-11-1>

“Low-concentration PM2.5 and mortality: Estimating acute and chronic effects in a population-based study.”

Environmental Health Perspectives.

<https://ehp.niehs.nih.gov/1409111/>

“Fine particulate matters: The impact of air quality standards on cardiovascular mortality”.

Environmental Research.

<https://www.ncbi.nlm.nih.gov/pubmed/29195185>

“The concentration-response between long-term PM2.5 exposure and mortality: A meta-regression approach.”

Environmental Research.

<https://www.ncbi.nlm.nih.gov/pubmed/30077140>

“Association of short-term exposure to air pollution with mortality in older adults.”

Journal of the American Medical Association.

<https://jamanetwork.com/journals/jama/fullarticle/2667069>

“Low level air pollution and exacerbation of existing COPD: A case crossover analysis.”

Environmental Health.

<https://ehjournal.biomedcentral.com/articles/10.1186/s12940-016-0179-z>

“Concentration-response of short-term ozone exposure and hospital admissions for asthma in Texas.”

Environment International.

<https://www.ncbi.nlm.nih.gov/pubmed/28434561>

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612-385-2867





**Comments regarding the air quality permit from the VDEQ State Air Pollution Control Board for an  
Atlantic Coast Pipeline Compressor Station**

**Larysa Dyrszka, MD**

**August 27, 2018**

Shale gas development has the potential to cause adverse health impacts.<sup>1</sup> But due to a set of exemptions this industry received from key federal public health laws<sup>2</sup>, these health issues have only recently begun to come to light.<sup>3</sup>

Reports of ill health in impacted people became evident over recent years, despite the lack of involvement from federal and state public health and environmental departments. Lists were generated by activists (List of the Harmed)<sup>4</sup> and surveys compiled (Earthworks' Survey of Health Impacts)<sup>5</sup>. A Health Impact Assessment<sup>6</sup> started in Battlement Mesa Colorado showed that air pollution was a stressor and particularly significant. And there is still no mechanism in place to monitor or track the health and environmental impacts from gas drilling operations, including the economic costs.

In 2012 Congress commissioned a report<sup>7</sup> which found that accidents happen and violations occur in this industry frequently, and even the best regulations have not prevented environmental disasters.

Physicians, Scientists and Engineers for Healthy Energy published an analysis of the peer-reviewed literature in 2015. Their results, as of 2015, indicated that at least 685 papers have been published in peer-reviewed scientific journals that are relevant to assessing the impacts of unconventional natural gas development (UNGD). 84% of public health studies contain findings that indicate public health hazards, elevated risks, or adverse health outcomes; 69% of water quality studies contain findings that indicate potential, positive association, or actual incidence of water contamination; and 87% of air quality studies contain findings that indicate elevated air pollutant emissions and/or atmospheric concentrations.<sup>8 9</sup> There are, as of today, 1565 peer-reviewed studies on fracking in the PSE for Healthy Energy ROGER database.<sup>10</sup>

<sup>1</sup> Shonkoff et al. April 2014. Environmental Public Health Dimensions of Shale and Tight Gas Development. EnvHealthPerspectives. Access at: <http://dx.doi.org/10.1289/ehp.1307866>

<sup>2</sup> <http://www.ewg.org/research/free-pass-oil-and-gas/oil-and-gas-industry-exemptions>

<sup>3</sup> Rabinowitz et al. Sept 2014. Proximity to Natural Gas Wells and Reported Health Status: Results of a Household Survey in Washington County, Pennsylvania. EHP. Access at: <http://dx.doi.org/10.1289/ehp.1307732>

<sup>4</sup> <http://pennsylvaniaallianceforcleanwaterandair.wordpress.com/the-list/>

<sup>5</sup> Steinzor, N, et al., Investigating Links Between Shale Gas Impacts and Health through a Community Survey Project in Pennsylvania, New Solutions, Vol. 23(1) 55-83 (May 2013). Access at: <http://www.earthworksaction.org/files/publications/SteinzorSubraSumiShaleGasHealthImpacts2013.pdf>

<sup>6</sup> Witter R, et al, Battlement Mesa HIA 2011 <http://www.garfield-county.com/environmental-health/battlement-mesa-health-impact-assessment-draft2.aspx>

<sup>7</sup> [http://democrats.naturalresources.house.gov/sites/democrats.naturalresources.house.gov/files/2012-02-08\\_RPT\\_DrillingDysfunction.pdf](http://democrats.naturalresources.house.gov/sites/democrats.naturalresources.house.gov/files/2012-02-08_RPT_DrillingDysfunction.pdf)

<sup>8</sup> <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0154164>

<sup>9</sup> <https://www.psehealthyenergy.org/our-work/publications/archive/the-science-on-shale-gas-development/>

<sup>10</sup> <https://www.psehealthyenergy.org/our-work/shale-gas-research-library/>

see comments submitted  
by Larysa Dyrszka a  
document available on VDEQ  
website



Air Division 1, rr &lt;airdivision1@deq.virginia.gov&gt;

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**Buckingham Compressor Station Letter**

1 message

**Guy Dixon** <gbdixon@kyanite.com>

Sat, Sep 8, 2018 at 4:11 PM

To: "airdivision1@deq.virginia.gov" &lt;airdivision1@deq.virginia.gov&gt;

Cc: Guy Dixon &lt;gbdixon@kyanite.com&gt;

Dear Sir or Madam,

Please find attached my company's letter in support of the ACP and the compressor station planned for Buckingham County.

Don't hesitate to contact me personally if you have any questions or need any clarifications.

Best Regards,

---

**Guy Dixon** *President & General Manager*

**Kyanite Mining Corporation**

30 Willis Mountain Plant Lane

Dillwyn, VA 23936

434 983-2085

434 983-4341 (fax)

guydixon@kyanite.com

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**Buckingham Compressor Station Letter (Sept 2018).pdf**  
67K



# KYANITE

## MINING CORPORATION

*Dillwyn, Virginia*

Guy Dixon, President

September 4<sup>th</sup>, 2018

Virginia Department of Environmental Quality  
Piedmont Regional Office  
4949-A Cox Road  
Glen Allen, VA 23060

RE: Buckingham Compressor Station

Dear Sir or Madam:

On behalf of Kyanite Mining Corporation (KMC), I appreciate this opportunity to submit our comments on the draft air quality permit for the Buckingham Compressor Station. As you know, the station is an integral part of the Atlantic Coast Pipeline, and KMC, along with many other members of the Commonwealth's business community, have strongly supported the project. We believe our state's (and our nation's) continued economic health and growth depend upon a secure, reliable and affordable supply of energy. The pipeline is a key to achieving that goal.

In addition to the significant overall benefits to the state and nation alluded to above, this pipeline will have direct and measurable positive impacts on the company that I represent . . . a company, I might add, that has been in business here in central Virginia for almost a century and here in Buckingham County for almost 70 years. These positive impacts are both economic (lower fuel costs per unit of energy used) and environmental (lower sulfur and particulate emissions per unit of production). It is a win for the efficiency of our operation and a win for the natural environment in which we operate. Additionally, I have no doubt that the pipeline will help us compete in our ever-more globally competitive marketplace, while growing our business and continuing to offer the good men and women of this area meaningful, safe and well-paying jobs.

No matter how attractive the project might be from an energy standpoint, however, my family's business could not support it if we felt it had the potential to damage Virginia's environment. Fortunately, we have no such concerns. We are impressed by the developers' commitment to protecting our natural resources. We are equally impressed with the thoroughness and dedication your department has exhibited while reviewing the ACP's environmental impacts and your

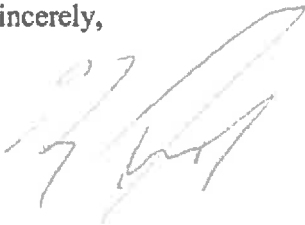
willingness to take strong steps to ensure those impacts are held to an absolute minimum. You have shown that same dedication in developing the draft air permit.

We are very pleased with the strict emissions limits included in the draft. Although the station is classified under federal and state regulations as a "minor" source of emissions, we understand that the limits included in the draft permit are much more typical of those imposed on larger facilities with much higher emissions levels. In fact, we understand that the limits in the draft permit are four to 10 times stricter than the limits in any other permit recently issued for compressor stations in Virginia. These stringent limits apply to regulated emissions ranging from nitrogen oxides to volatile organic compounds to carbon monoxide, and they will help ensure that Virginia's air remains clean and healthy even as we expand our energy infrastructure.

Additionally, we are impressed by the control technology required by the draft permit. Here again, these controls are more typical of those mandated for much larger facilities with higher levels of emissions. The systems included in the draft permit cover an impressive range from selective catalytic reduction to a vent gas recovery system designed to minimize the release of natural gas into the atmosphere. We are confident that the developers will adhere to the permit's strong requirements for air quality protection.

The Department of Environmental Quality has worked hard for many years to ensure that future generations of Virginians will have clean water and air. We applaud you for continuing that work through the terms and conditions in the Buckingham Compressor Station's draft air permit. Lastly, Kyanite Mining Corporation thanks you for the opportunity to offer our comments on this important regulatory matter.

Sincerely,

A handwritten signature in dark ink, appearing to be "J. L. Smith", written over a light blue horizontal line.